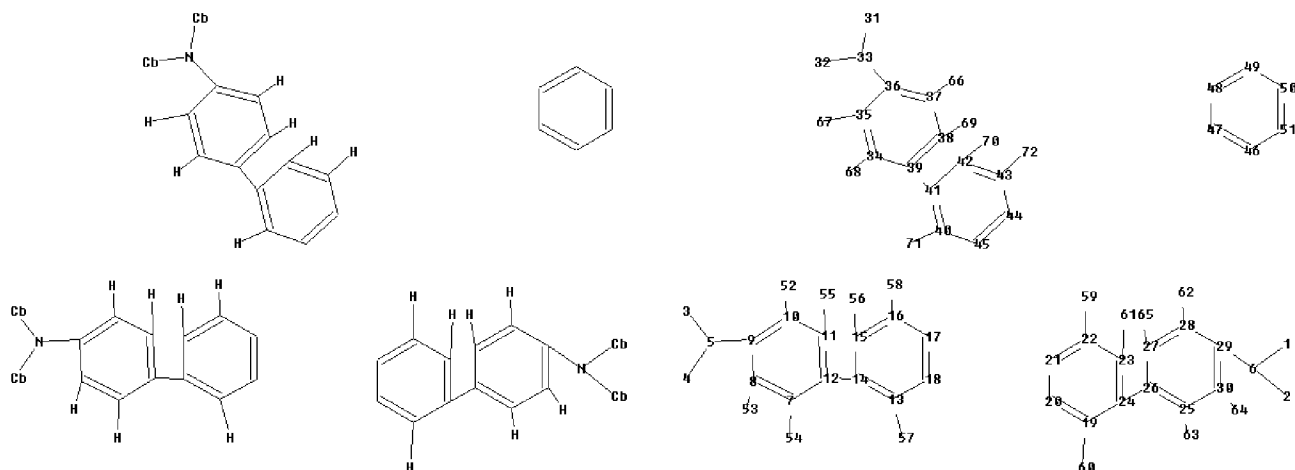


# STN-10/594,239

=>

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chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60 61 62 63 64  
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58  
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 33-36 34-68  
35-67 37-66  
38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60  
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66  
38-69 39-41 40-71  
42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom

20:Atom 21:Atom  
 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
 31:Atom 32:Atom  
 33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom  
 42:Atom 43:Atom  
 44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS  
 53:CLASS 54:CLASS  
 55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS  
 63:CLASS 64:CLASS  
 65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS  
 Generic attributes :

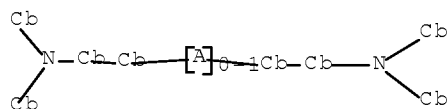
1:  
 Saturation : Unsaturated  
 2:  
 Saturation : Unsaturated  
 3:  
 Saturation : Unsaturated  
 4:  
 Saturation : Unsaturated  
 31:  
 Saturation : Unsaturated  
 32:  
 Saturation : Unsaturated

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 10:35:54 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 1808883 TO ITERATE

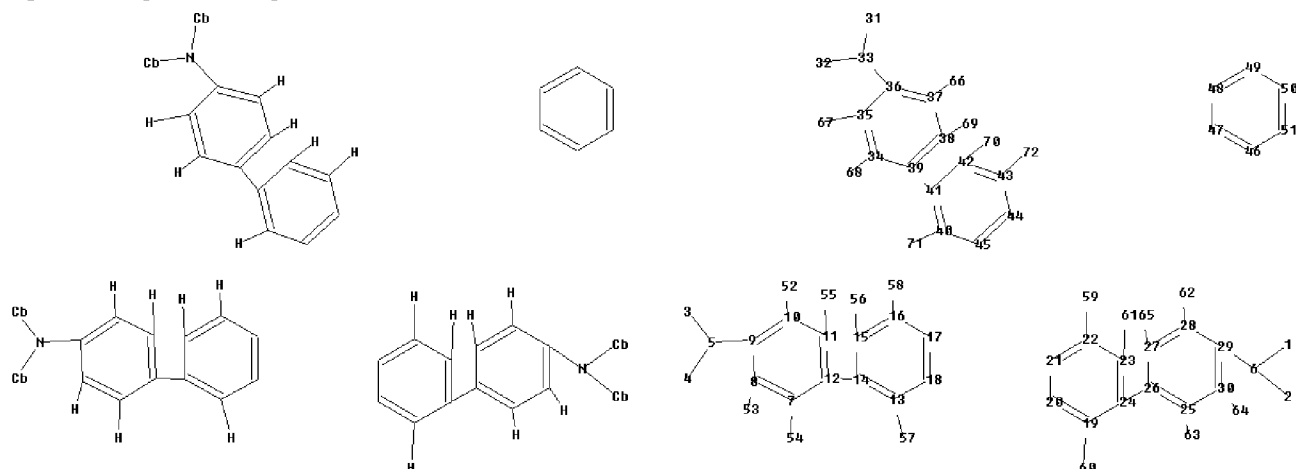
0.1% PROCESSED 2000 ITERATIONS 0 ANSWERS  
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
 SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*INCOMPLETE\*\*  
 BATCH \*\*INCOMPLETE\*\*  
 PROJECTED ITERATIONS: 36110519 TO 36244801  
 PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=>

Uploading C:\Program Files\STNEXP\Queries\10594239#1.str



chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60 61 62 63 64  
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58  
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 33-36 34-68  
35-67 37-66  
38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60  
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66  
38-69 39-41 40-71  
42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom  
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
31:Atom 32:Atom

33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom  
 42:Atom 43:Atom  
 44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS  
 53:CLASS 54:CLASS  
 55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS  
 63:CLASS 64:CLASS  
 65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS

Generic attributes :

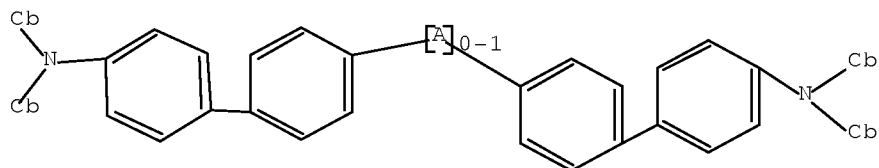
1:  
 Saturation : Unsaturated  
 2:  
 Saturation : Unsaturated  
 3:  
 Saturation : Unsaturated  
 4:  
 Saturation : Unsaturated  
 31:  
 Saturation : Unsaturated  
 32:  
 Saturation : Unsaturated

L3 STRUCTURE UPLOADED

=> d 13

L3 HAS NO ANSWERS

L3 STR



Structure attributes must be viewed using STN Express query preparation.

=> s 13

SAMPLE SEARCH INITIATED 10:40:07 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 6041 TO ITERATE

33.1% PROCESSED 2000 ITERATIONS 10 ANSWERS  
 INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)  
 SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
 BATCH \*\*COMPLETE\*\*  
 PROJECTED ITERATIONS: 116159 TO 125481  
 PROJECTED ANSWERS: 275 TO 933

L4 10 SEA SSS SAM L3

=> s 13 full  
FULL SEARCH INITIATED 10:40:14 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 119677 TO ITERATE

100.0% PROCESSED 119677 ITERATIONS 388 ANSWERS  
SEARCH TIME: 00.00.02

L5 388 SEA SSS FUL L3

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> s 15  
L6 422 L5

=> s 16 and electrolumin?  
108605 ELECTROLUMIN?  
L7 329 L6 AND ELECTROLUMIN?

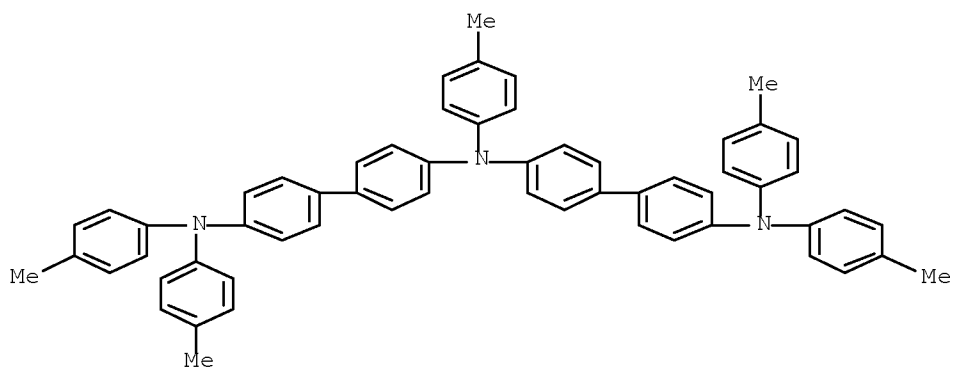
=> d ibib abs hitstr 323-329

L7 ANSWER 323 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1995:562195 CAPLUS Full-text  
DOCUMENT NUMBER: 123:20922  
ORIGINAL REFERENCE NO.: 123:3811a,3814a  
TITLE: Molecular design of hole transport materials for  
obtaining high durability in organic  
~~electroluminescent~~ diodes  
AUTHOR(S): Adachi, Chihaya; Nagai, Kazukiyo; Tamoto, Nozomu  
CORPORATE SOURCE: Chemical Products R and D Center, Ricoh Co., Ltd.,  
Shizuoka, 410, Japan  
SOURCE: Applied Physics Letters (1995), 66(20), 2679-81  
CODEN: APPLAB; ISSN: 0003-6951  
PUBLISHER: American Institute of Physics  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The mol. design of hole transport materials (HTMs) for producing high  
durability in organic layered ~~electroluminescent~~ (EL) diodes was elucidated.  
The durability tests were examined using 14 hole transport materials in the  
cell structure of an anode/hole transport layer (HTL)/emitter layer  
(EML)/cathode. The ionization potential (Ip) of HTLs is the dominant factor  
for obtaining high durability in organic EL devices. The formation of the  
small energy barrier at the interface of a HTL/anode was required for high  
durability. Also, no straightforward relations between m.p., glass transition  
temperature of the HTMs, and durability of the EL devices were observed The  
EL device using the HTM having a low Ip (5.08 eV) showed an especially  
remarkable stability. In this case, the half-life period of the initial  
luminance was beyond 500 h.

IT 134917-82-1  
RL: DEV (Device component use); USES (Uses)  
(hole transport material for obtaining high durability in organic  
~~electroluminescent~~ diodes)

RN 134917-82-1 CAPLUS  
CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[bis(4-methylphenyl)amino][1,1'-  
biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)

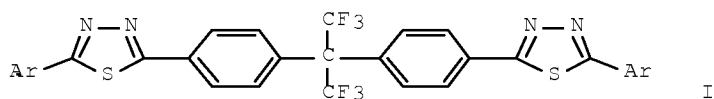


OS.CITING REF COUNT: 269 THERE ARE 269 CAPLUS RECORDS THAT CITE THIS RECORD (272 CITINGS)

L7 ANSWER 324 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1995:275316 CAPLUS Full-text  
 DOCUMENT NUMBER: 122:302391  
 ORIGINAL REFERENCE NO.: 122:54841a, 54844a  
 TITLE: Electroluminescent devices  
 INVENTOR(S): Nagai, Kazukyo; Adachi, Chihaya; Sakon, Hirota; Oota, Masabumi  
 PATENT ASSIGNEE(S): Ricoh Kk, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

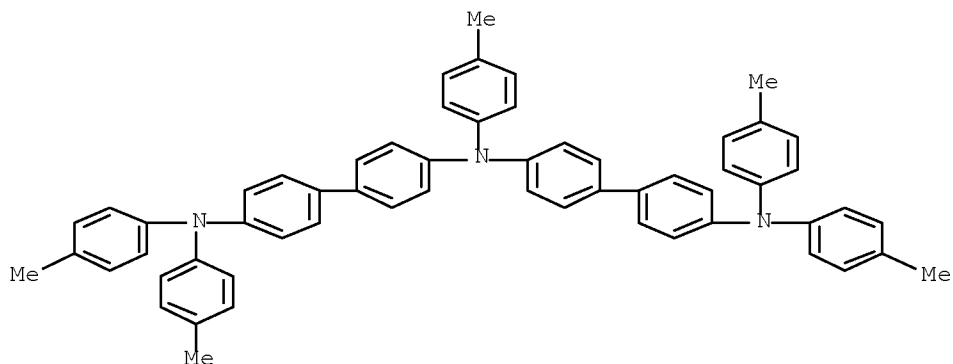
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06248260	A	19940906	JP 1993-61049	19930225
PRIORITY APPLN. INFO.:			JP 1993-61049	19930225
OTHER SOURCE(S):	MARPAT 122:302391			

GI



AB The devices contain a layer or plural layers, containing organic thiazole compds. I [Ar = (substituted) alkyl, (substituted) aryl, (substituted) heterocyclic], sandwiched by an anode and a cathode.  
 IT 134917-82-1  
 RL: DEV (Device component use); USES (Uses)  
 (pos.-hole transporting layer component; electroluminescent devices containing thiazole derivs.)  
 RN 134917-82-1 CAPLUS

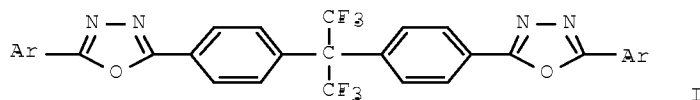
CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)



L7 ANSWER 325 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1994:641361 CAPLUS Full-text  
 DOCUMENT NUMBER: 121:241361  
 ORIGINAL REFERENCE NO.: 121:43817a,43820a  
 TITLE: organic electroluminescent devices  
 INVENTOR(S): Nagai, Kazukyo; Oota, Masabumi; Sakon, Hirota; Adachi, Chihaya; Takahashi, Toshihiko  
 PATENT ASSIGNEE(S): Ricoh Kk, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 4  
 PATENT INFORMATION:

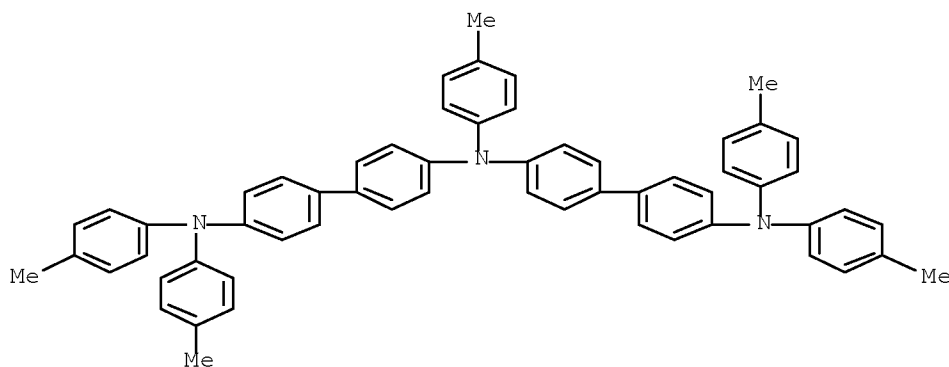
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06065569	A	19940308	JP 1993-104993	19930407
PRIORITY APPLN. INFO.:			JP 1992-186051	A1 19920620
OTHER SOURCE(S):	MARPAT 121:241361			

GI



AB The title element comprises: an electron-transport or a phosphor layer consisting of oxadiazole compound I [Ar = (substituted) alkyl, (substituted) aryl, (substituted) heterocyclic aromatic ring]. The element is suited for use in the white-light-emitting devices.  
 IT 134917-82-1  
 RL: PRP (Properties)

RN 134917-82-1 CAPLUS  
CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)



L7 ANSWER 326 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1994:545550 CAPLUS Full-text  
DOCUMENT NUMBER: 121:145550  
ORIGINAL REFERENCE NO.: 121:26101a,26104a  
TITLE: Organic thin-film ~~electroluminescent~~ element  
INVENTOR(S): Adachi, Chihaya; Oota, Masabumi; Sakon, Hirota;  
Takahashi, Toshihiko  
PATENT ASSIGNEE(S): Ricoh Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 05299174	A	19931112	JP 1992-126815	19920420
PRIORITY APPLN. INFO.:			JP 1992-126815	19920420

AB In the title element comprising an anode, a cathode, and 1 or a plurality of organic compound layers sandwiched by the anode and cathode, the relative difference of the ionization potentials of the anode (preferably an ITO electrode) and an organic compound layer (may be organic hole transport layer, organic hole transport light-emitting layer, or a single light-emitting organic compound layer) in contact with the anode is  $<0.85$  eV. The electroluminescent element shows high initial luminance-maintaining ratio and superior durability.

IT 134917--82--1

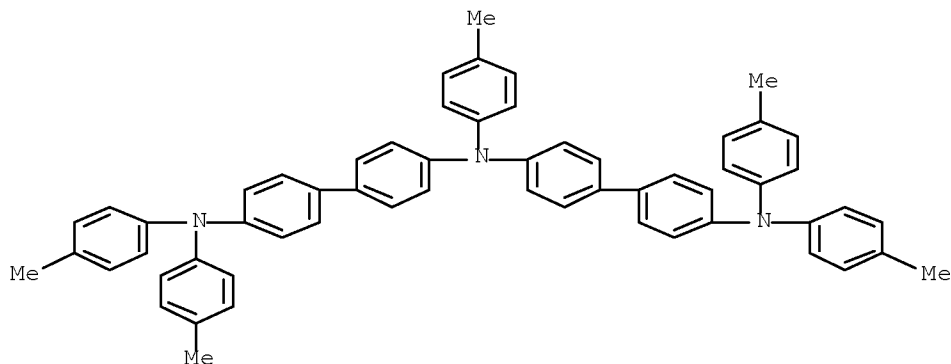
RL: USES (Uses)

(organic thin-film electroluminescent element with hole transport layer of, ionization potential of)

RN 134917-82-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)





L7 ANSWER 327 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1994:65553 CAPLUS Full-text

DOCUMENT NUMBER: 120:65553

ORIGINAL REFERENCE NO.: 120:11657a,11660a

TITLE: Electroluminescent devices including triamine hole-transporting compounds

INVENTOR(S): Adachi, Chihaya; Oota, Masabumi; Sakon, Hirota; Takahashi, Toshihiko; Shimada, Tomoyuki

PATENT ASSIGNEE(S): Ricoh Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 05239455	A	19930917	JP 1992-73306	19920225
JP 3565870	B2	20040915		
JP 2003031372	A	20030131	JP 2002-168518	19920225
PRIORITY APPLN. INFO.:			JP 1992-73306	A3 19920225

OTHER SOURCE(S): MARPAT 120:65553

AB The title devices comprise, between a hole-injection electrode and an electron-injection electrode, (1) a double layer comprising successively, from the implanting electrode side, an organic hole-transporting layer and an organic light-emitting layer or (2) triple layer comprising an organic hole-transporting layer, an organic light-emitting layer, and an organic electron-transporting layer, in which the hole-transporting layer contains Ar1Ar2NBlnNAr5B2nNAr3Ar4 [Bln, B2n = (substituted) arylene; n = 1-4; Ar1-5 = H, (substituted) alkyl, aryl].

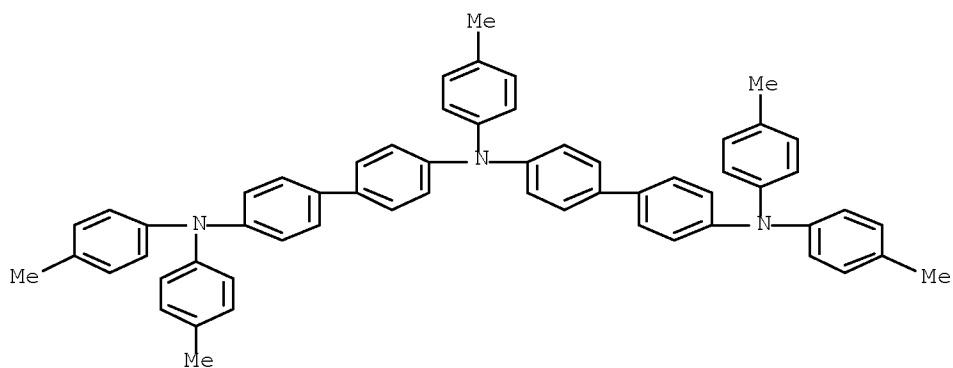
IT 134917-82-1

RL: PRP (Properties)

(electroluminescent devices with hole transport layers containing)

RN 134917-82-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)

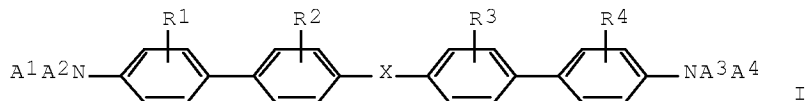


OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L7 ANSWER 328 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1993:417890 CAPLUS Full-text  
 DOCUMENT NUMBER: 119:17890  
 ORIGINAL REFERENCE NO.: 119:3197a,3200a  
 TITLE: Preparation of bis(aminobiphenyl) compounds and photoconductors containing them as charge-transporting agents  
 INVENTOR(S): Ueda, Hideaki  
 PATENT ASSIGNEE(S): Minolta Camera Kk, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05045906	A	19930226	JP 1991-205203	19910815
JP 3079665	B2	20000821		
US 5314775	A	19940524	US 1992-926284	19920810
			JP 1991-205203	A 19910815

PRIORITY APPLN. INFO.:  
 ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): MARPAT 119:17890  
 GI



AB Photoconductors comprise an elec.-conductive support having thereon a photosensitive layer containing the title compds. I (R1-4 = H, alkyl, alkoxy, halo; A1-4 = alkyl, aralkyl, aryl, biphenyl, heterocycl, these groups may be substituted; X = O, S, CR5R6; R5-6 = H, alkyl, aryl). The photoconductors

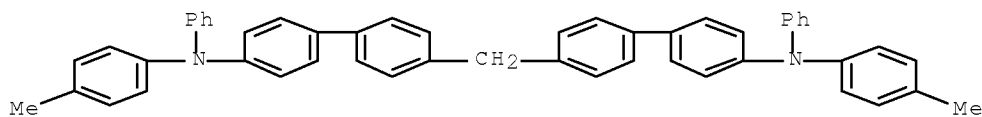
are excellent in sensitivity, charge transportability, initial surface potential, dark decay, and durability in repeated use, and are useful for electrophotog. photoreceptors and electroluminescent devices.

IT 148150-49-6 148150-50-9 148150-51-0  
 148150-52-1 148150-53-2 148150-54-3  
 148150-55-4 148150-56-5 148150-57-6  
 148150-58-7 148150-59-8 148150-60-1  
 148150-61-2 148150-62-3 148150-63-4  
 148150-64-5 148150-65-6 148150-66-7

RL: TEM (Technical or engineered material use); USES (Uses)  
 (electrophotog. photoreceptor charge-transporting agent)

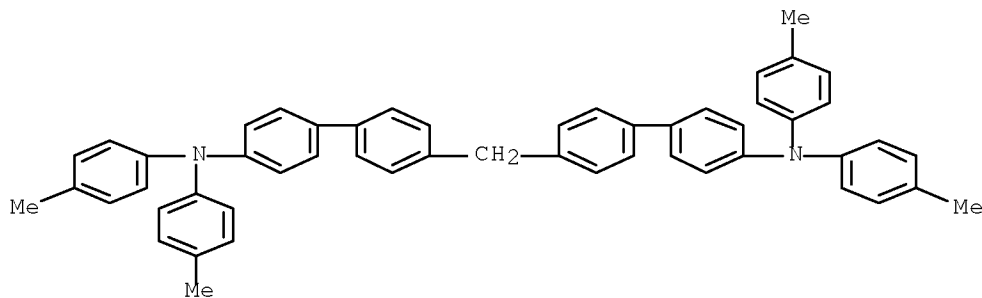
RN 148150-49-6 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-[[4'-[(4-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]methyl]-N-phenyl- (CA INDEX NAME)



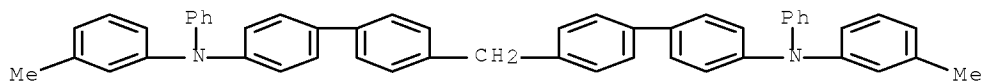
RN 148150-50-9 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-methylenebis[N,N-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)



RN 148150-51-0 CAPLUS

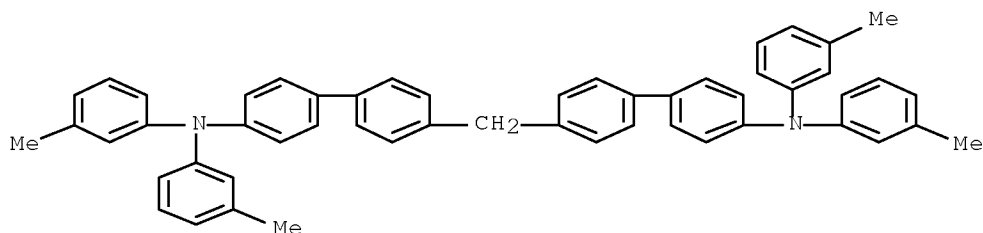
CN [1,1'-Biphenyl]-4-amine, N-(3-methylphenyl)-4'-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]methyl]-N-phenyl- (CA INDEX NAME)



RN 148150-52-1 CAPLUS

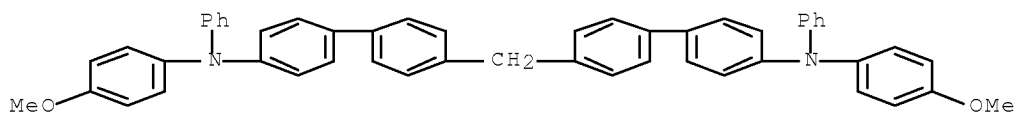
CN [1,1'-Biphenyl]-4-amine, 4',4'''-methylenebis[N,N-bis(3-methylphenyl)-

(9CI) (CA INDEX NAME)



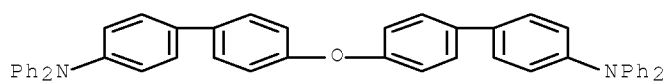
RN 148150-53-2 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-methylenebis[N-(4-methoxyphenyl)-N-phenyl-]  
(9CI) (CA INDEX NAME)



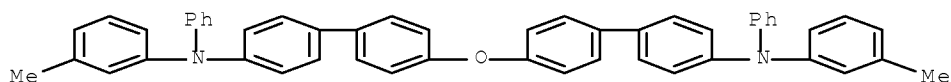
RN 148150-54-3 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]oxy]-  
N,N-diphenyl- (CA INDEX NAME)



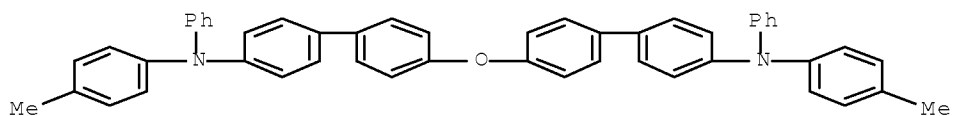
RN 148150-55-4 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(3-methylphenyl)-4'-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]oxy]-N-phenyl-  
(CA INDEX NAME)



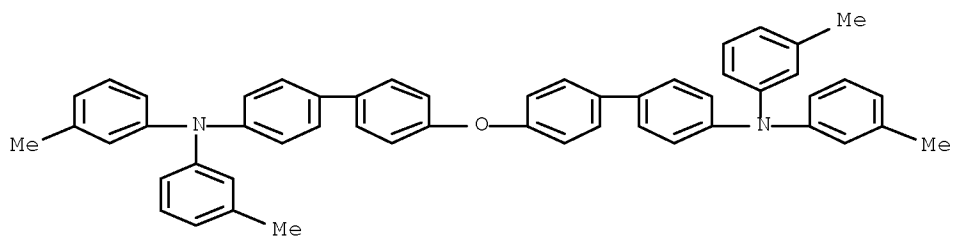
RN 148150-56-5 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-[[4'-[(4-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]oxy]-N-phenyl-  
(CA INDEX NAME)



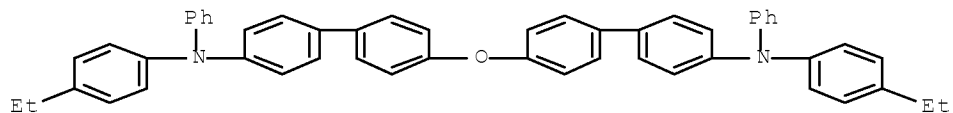
RN 148150-57-6 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-oxybis[N,N-bis(3-methylphenyl)- (9CI)  
(CA INDEX NAME)



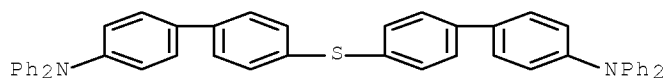
RN 148150-58-7 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-oxybis[N-(4-ethylphenyl)-N-phenyl- (9CI)  
(CA INDEX NAME)



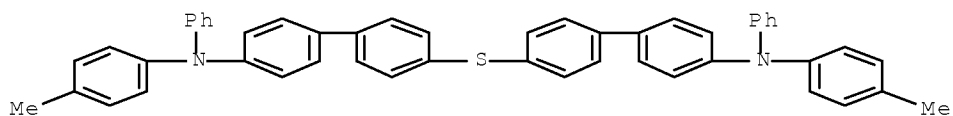
RN 148150-59-8 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]thio]-  
N,N-diphenyl- (CA INDEX NAME)



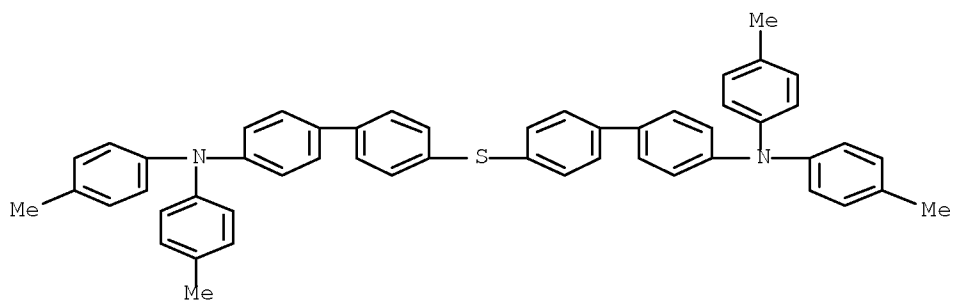
RN 148150-60-1 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-[[4'-[(4-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]thio]-N-phenyl- (CA INDEX NAME)



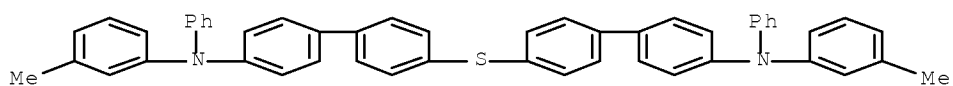
RN 148150-61-2 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-thiobis[N,N-bis(4-methylphenyl)- (9CI)  
(CA INDEX NAME)



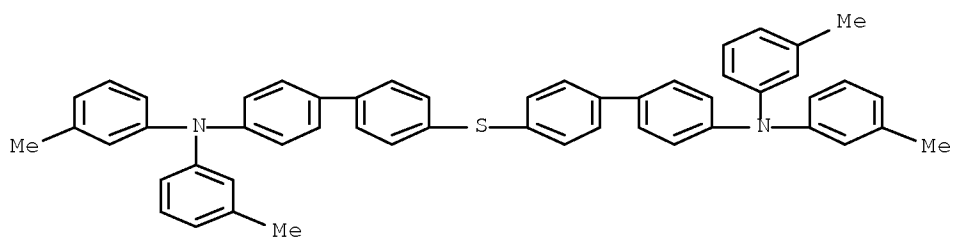
RN 148150-62-3 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(3-methylphenyl)-4'-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]thio]-N-phenyl- (CA INDEX NAME)



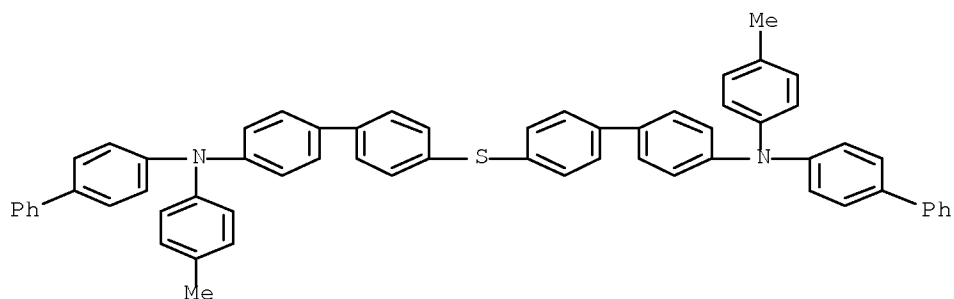
RN 148150-63-4 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-thiobis[N,N-bis(3-methylphenyl)- (9CI)  
(CA INDEX NAME)



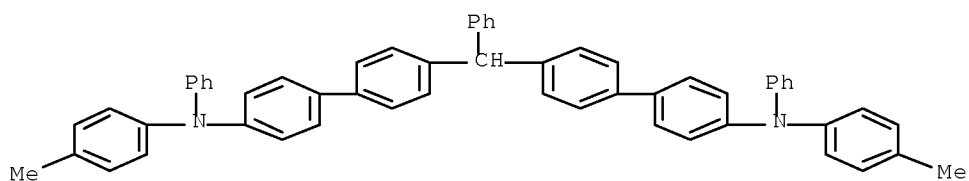
RN 148150-64-5 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4',4'''-thiobis[N-[1,1'-biphenyl]-4-yl-N-(4-methylphenyl)- (9CI) (CA INDEX NAME)



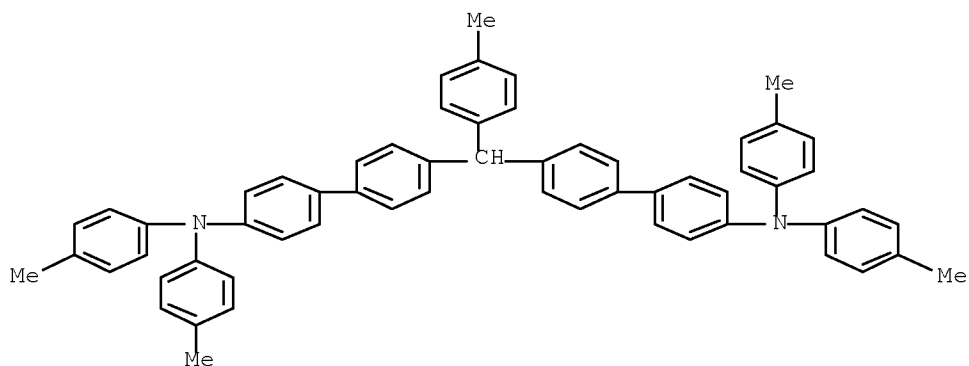
RN 148150-65-6 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-(4-methylphenyl)-4'-[[4'-[(4-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylmethyl]-N-phenyl- (CA INDEX NAME)



RN 148150-66-7 CAPLUS

CN [1,1'-Biphenyl]-4-amine, 4'-[[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)methyl]-N,N-bis(4-methylphenyl)- (CA INDEX NAME)

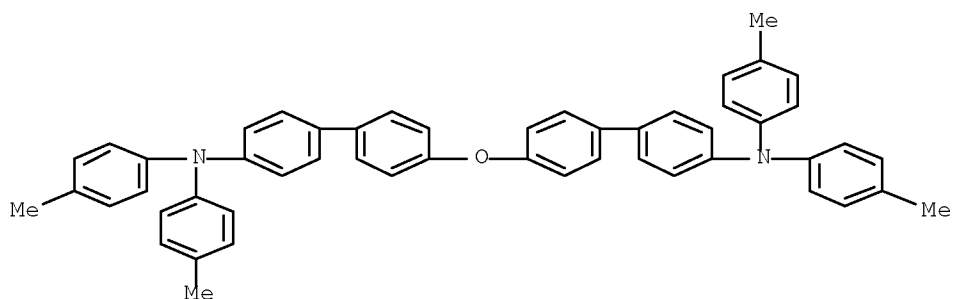


IT 148150-48-5P

RL: PREP (Preparation)

(preparation of, as electrophotog. photoreceptor charge-transporting agent)

RN 148150-48-5 CAPLUS  
 CN [1,1'-Biphenyl]-4-amine, 4',4'''-oxybis[N,N-bis(4-methylphenyl)- (9CI)  
 (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
 (1 CITINGS)

L7 ANSWER 329 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1993:90270 CAPLUS Full-text  
 DOCUMENT NUMBER: 118:90270  
 ORIGINAL REFERENCE NO.: 118:15663a,15666a  
 TITLE: Organic electroluminescent device  
 INVENTOR(S): Sato, Yoshiharu; Otsuka, Shigenori  
 PATENT ASSIGNEE(S): Mitsubishi Kasei Corp., Japan  
 SOURCE: Eur. Pat. Appl., 18 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 510541	A1	19921028	EP 1992-106677	19920416
EP 510541	B1	19951227		
R: DE, FR, GB, NL				
JP 04320484	A	19921111	JP 1991-88444	19910419
JP 2998268	B2	20000111		
US 5247226	A	19930921	US 1992-870310	19920417
PRIORITY APPLN. INFO.:			JP 1991-88444	A 19910419

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): MARPAT 118:90270

AB Electroluminescent devices comprising an anode, an organic hole injection transport layer, an organic luminescent layer, and a cathode are described in which the hole injection transport layer contains a metal complex and/or a metal salt of an aromatic carboxylic acid.

IT 145898-89-1

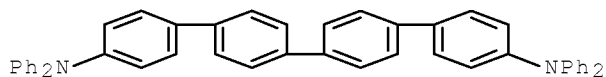
RL: PRP (Properties)

(electroluminescent devices with metal salt-containing hole injection layers containing)

RN 145898-89-1 CAPLUS

CN [1,1':4',1'':4'',1'''-Quaterphenyl]-4,4'''-diamine,  
 N4,N4,N4''',N4'''-tetraphenyl- (CA INDEX NAME)





OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)

=> d ibib abs hitstr 319-322

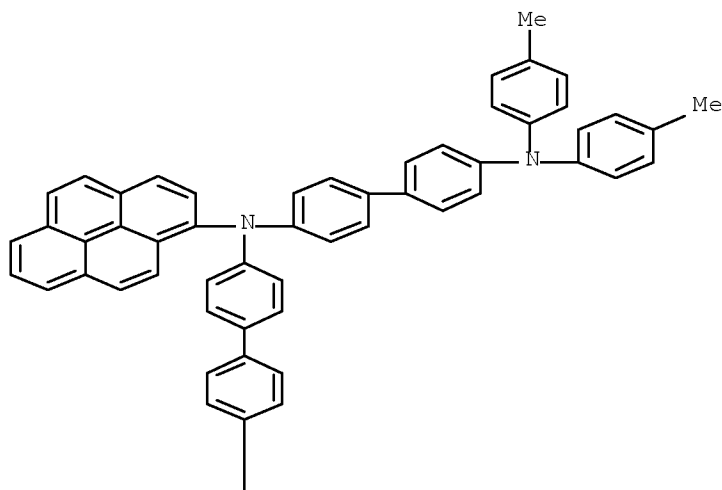
L7 ANSWER 319 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1995:867611 CAPLUS Full-text  
 DOCUMENT NUMBER: 123:285572  
 ORIGINAL REFERENCE NO.: 123:51170h,51171a  
 TITLE: Preparation of pyrene derivatives as electroluminescent materials  
 INVENTOR(S): Tamoto, Nozomi; Nagai, Kazukyo; Adachi, Chihaya; Sakon, Hirota  
 PATENT ASSIGNEE(S): Ricoh Kk, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07101911	A	19950418	JP 1993-271360	19931004
JP 3549555	B2	20040804		
PRIORITY APPLN. INFO.:			JP 1993-271360	19931004
OTHER SOURCE(S):	MARPAT	123:285572		
GI				

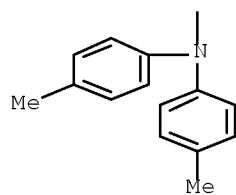
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title compds. I [R1 - R3 = halo, cyano, etc.; l = 0 - 9; m = 0 - 4; n = 0 - 5] are prepared An electroluminescent element containing the title compound II (preparation given) gave emission with high luminance for 1 mo.  
 IT 169195-00-0P 169195-01-1P 169195-02-2P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (preparation of pyrene derivs. as electroluminescent materials)  
 RN 169195-00-0 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-N-1-pyrenyl- (9CI) (CA INDEX NAME)

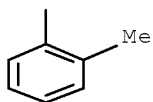
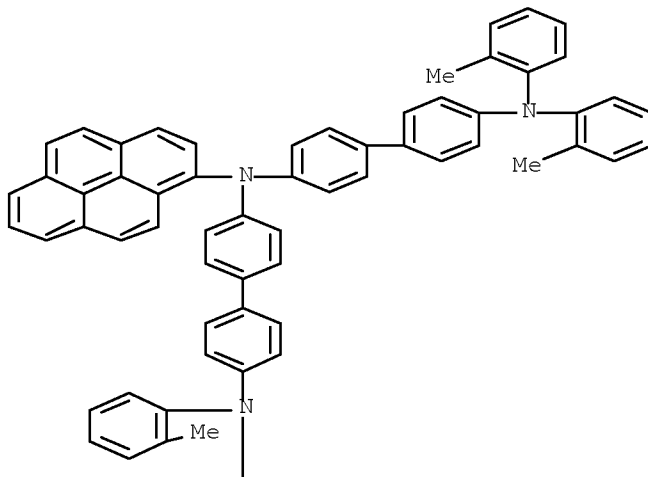
PAGE 1-A



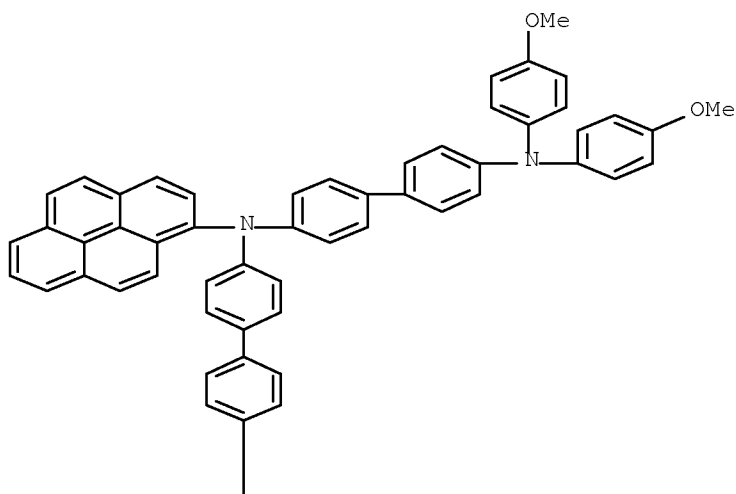
PAGE 2-A

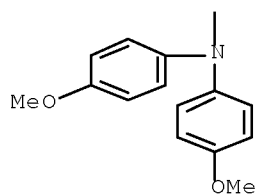


RN 169195-01-1 CAPLUS  
CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-[bis(2-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(2-methylphenyl)-N-1-pyrenyl- (9CI) (CA INDEX NAME)



RN 169195-02-2 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-[bis(4-methoxyphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methoxyphenyl)-N-1-pyrenyl- (9CI) (CA INDEX NAME)



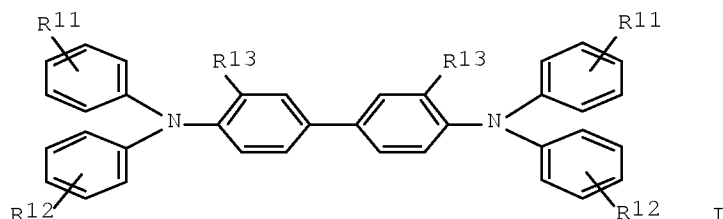


L7 ANSWER 320 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1995:769803 CAPLUS Full-text  
 DOCUMENT NUMBER: 123:183664  
 ORIGINAL REFERENCE NO.: 123:32405a,32408a  
 TITLE: Amine compound and electro-luminescence device  
 comprising same.  
 INVENTOR(S): Tomiyama, Hiromitsu; Oshino, Masahiko; Nakanishi,  
 Naoko; Suzuki, Mutsumi; Fukuyama, Masao; Murakami,  
 Mutsuaki; Nambu, Taro  
 PATENT ASSIGNEE(S): Hodogaya Chemical Co., Ltd., Japan; Matsushita  
 Electric Industrial Co., Ltd.  
 SOURCE: Eur. Pat. Appl., 98 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 650955	A1	19950503	EP 1994-117206	19941031
EP 650955	B1	19980819		
R: DE, FR, GB				
JP 07126615	A	19950516	JP 1993-273883	19931101
JP 3194657	B2	20010730		
JP 07126225	A	19950516	JP 1993-293800	19931101
JP 3574860	B2	20041006		
JP 07126226	A	19950516	JP 1993-293801	19931101
JP 3220950	B2	20011022		
JP 2001273978	A	20011005	JP 2001-49489	19931101
JP 3529735	B2	20040524		
JP 07331238	A	19951219	JP 1994-132744	19940615
JP 08003122	A	19960109	JP 1994-155470	19940615
JP 08100172	A	19960416	JP 1994-236622	19940930
JP 3274939	B2	20020415		
JP 2001181240	A	20010703	JP 2000-332663	20001031
JP 3567323	B2	20040922		
JP 2002343577	A	20021129	JP 2002-83871	20020325
JP 3745296	B2	20060215		
JP 2004182740	A	20040702	JP 2004-21884	20040129
JP 3880967	B2	20070214		
PRIORITY APPLN. INFO.:			JP 1993-273883	A 19931101

JP 1993-293800 A 19931101  
 JP 1993-293801 A 19931101  
 JP 1994-132744 A 19940615  
 JP 1994-155470 A 19940615  
 JP 1994-236622 A 19940930  
 JP 2001-49489 A3 19931101

OTHER SOURCE(S): MARPAT 123:183664  
 GI



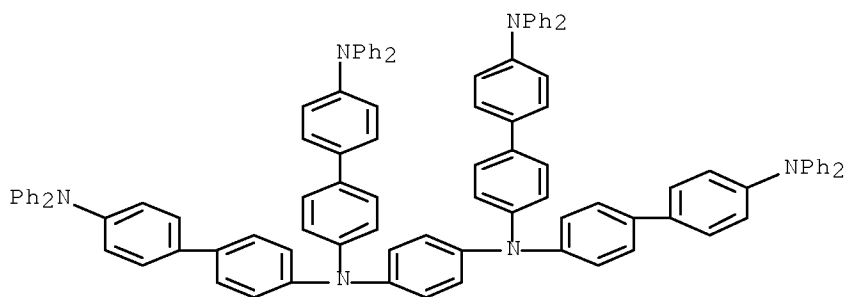
AB Novel amine compds. useful as electron-transporting materials to be incorporated in organic electro-luminescence (EL) devices are described, e.g., having the formula I [R1, R2 = H, alkyl, alkoxy, Ph, alkylphenyl, alkoxyphenyl, with the proviso that  $\geq 1$  of R1 and R2 is n-Bu, i-Bu, sec-Bu, tert-Bu, Ph, alkoxyphenyl, alkylphenyl; R3 = H, alkyl, alkoxy, Cl]. Five more Markush structures are given. The organic EL device can find wide application in various display units, requires a low applied voltage and exhibits a high luminance and an excellent stability.

IT 167218-73-7 167218-74-8 167218-75-9  
 167218-76-0 167218-77-1 167218-78-2  
 167218-79-3 167218-80-6 167218-81-7  
 167218-82-8 167218-83-9 167218-84-0  
 167218-85-1 167218-86-2 167218-87-3  
 167218-88-4 167218-89-5 167218-90-8  
 167218-91-9 167218-92-0 167218-93-1  
 167218-94-2 167218-95-3 167218-96-4  
 167218-97-5 167218-98-6 167218-99-7  
 167219-00-3 167219-01-4

RL: DEV (Device component use); USES (Uses)  
 (amine compound as electron-transporting material for electroluminescent devices)

RN 167218-73-7 CAPLUS

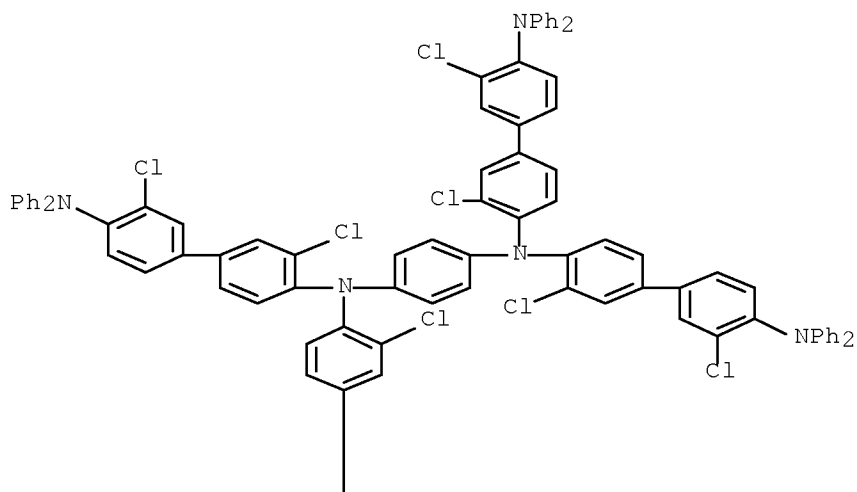
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,4-phenylenebis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



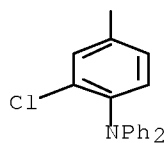
RN 167218-74-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,4-phenylenebis[3,3'-dichloro-N-[3,3'-dichloro-4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI)  
(CA INDEX NAME)

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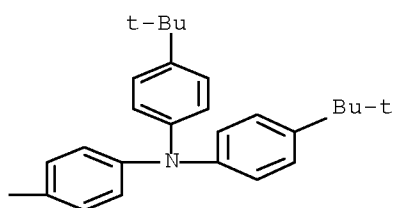
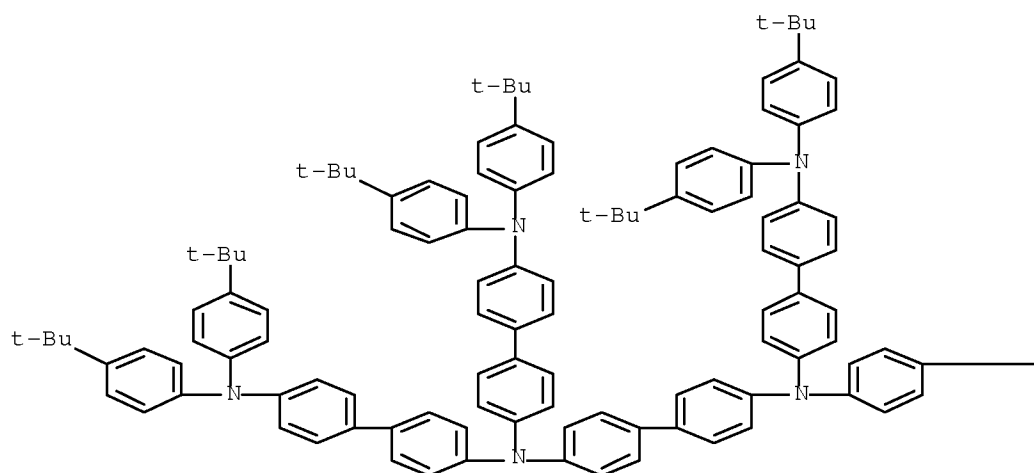


PAGE 2-A



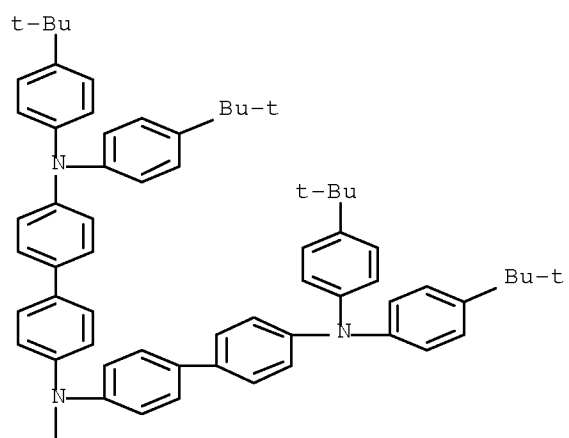
RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

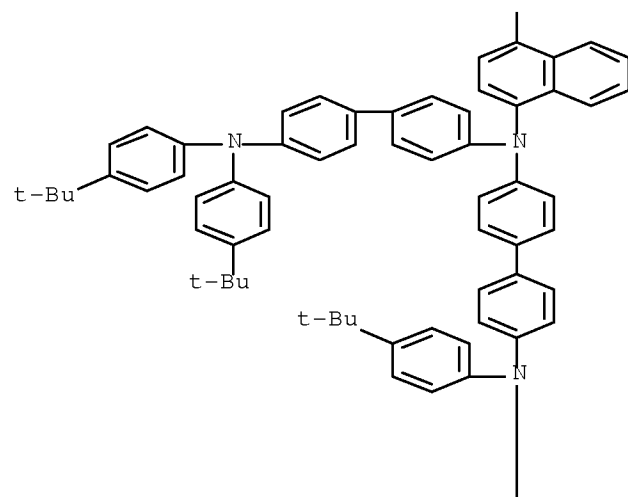


RN 167218-76-0 CAPLUS  
 CN 1,4-Naphthalenediamine, N1,N1,N4,N4-tetrakis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

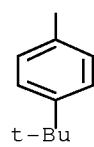
PAGE 1-A



PAGE 2-A



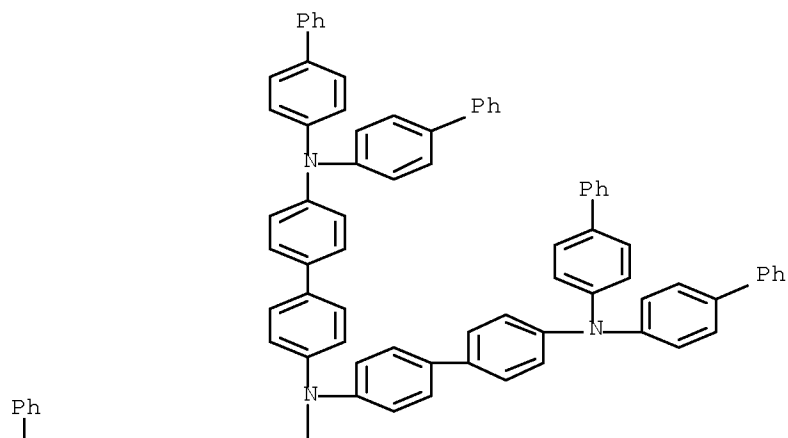
PAGE 3-A



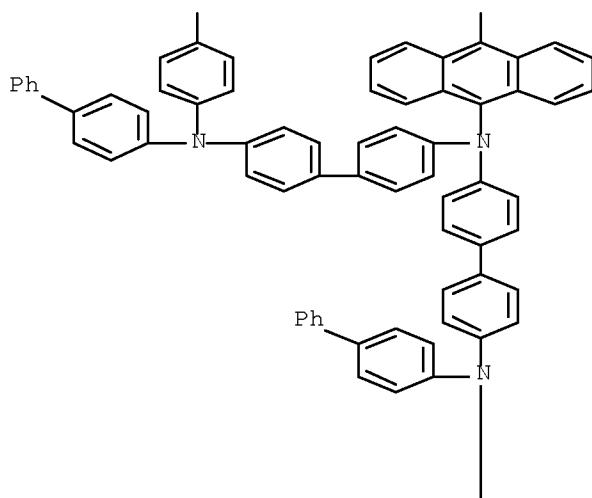


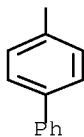
RN 167218-77-1 CAPLUS  
 CN 9,10-Anthracenediamine, N9,N9,N10,N10-tetrakis[4'-[bis([1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

PAGE 1-A



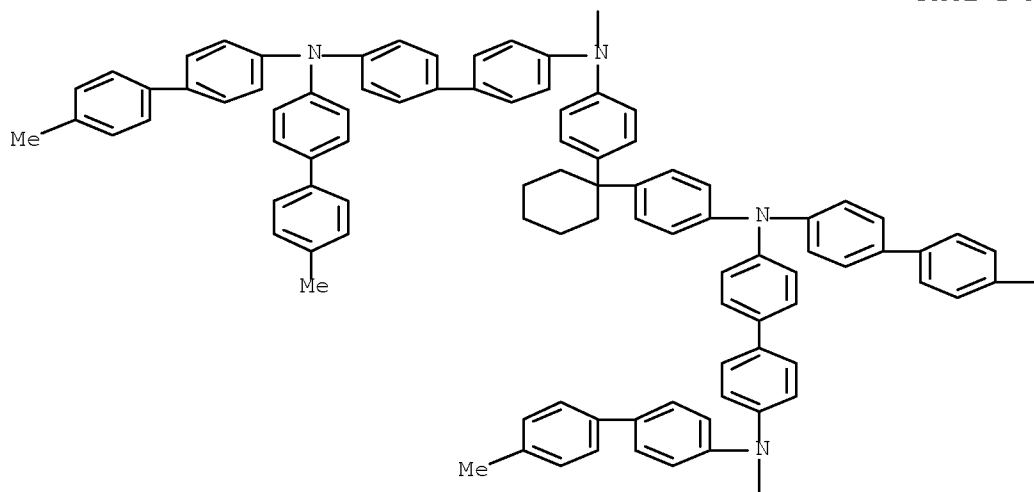
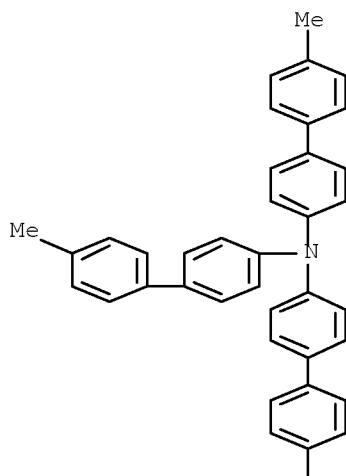
PAGE 2-A



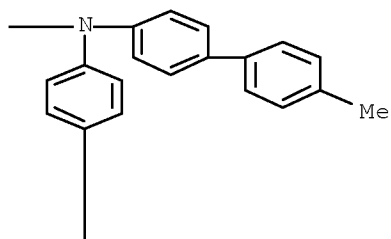


RN 167218-78-2 CAPLUS

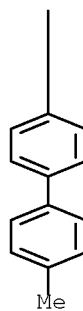
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(cyclohexylidenedi-4,1-phenylene)bis[N-  
[4'-[bis(4'-methyl[1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl]-N',N'-  
bis(4'-methyl[1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)



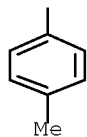
PAGE 2-B



PAGE 3-A



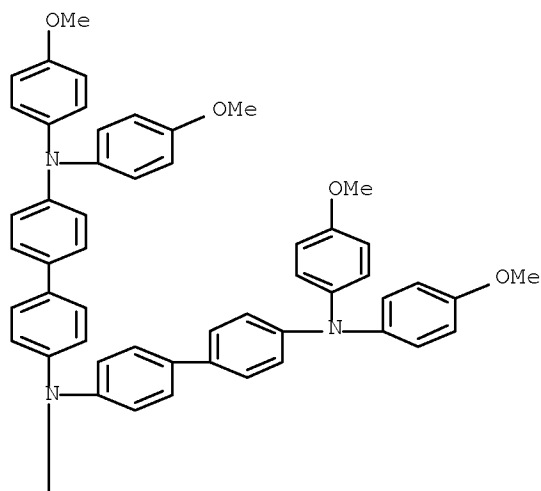
PAGE 3-B



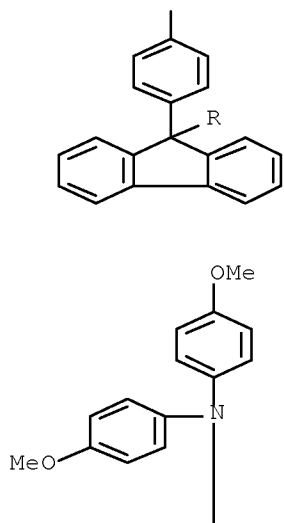
RN 167218-79-3 CAPLUS  
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[N-[4'-[bis(4-methoxyphenyl)amino]-[1,1'-biphenyl]-4-yl]-

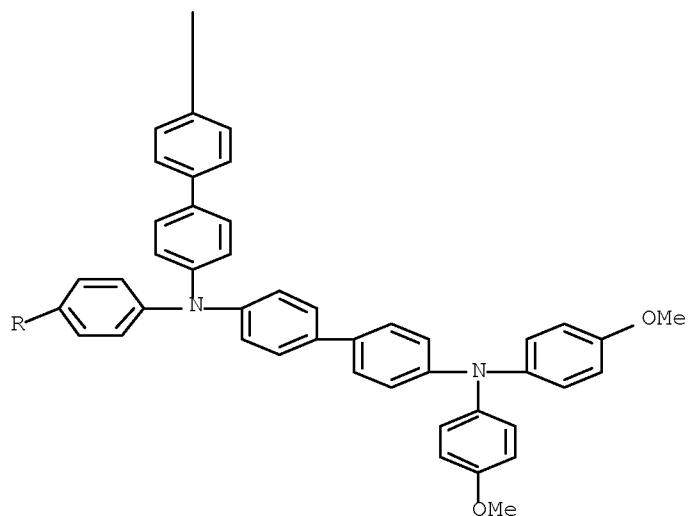
N',N'-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

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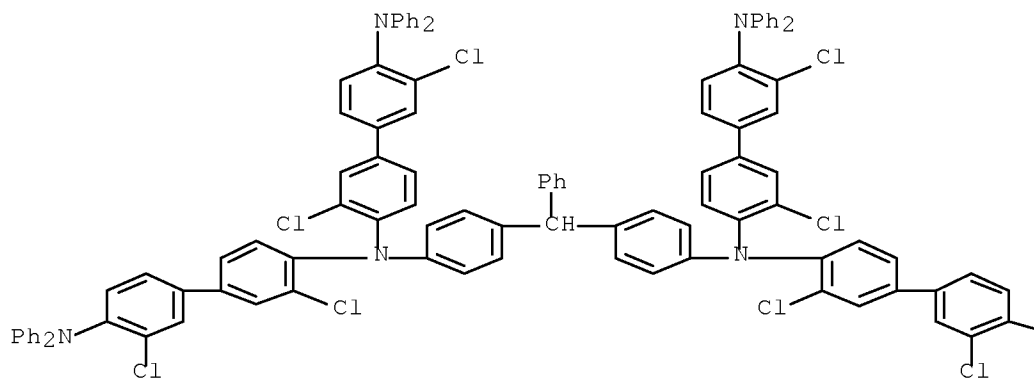
PAGE 2-A





RN 167218-80-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-[(phenylmethylene)di-4,1-phenylene]bis[3,3'-dichloro-N-[3,3'-dichloro-4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

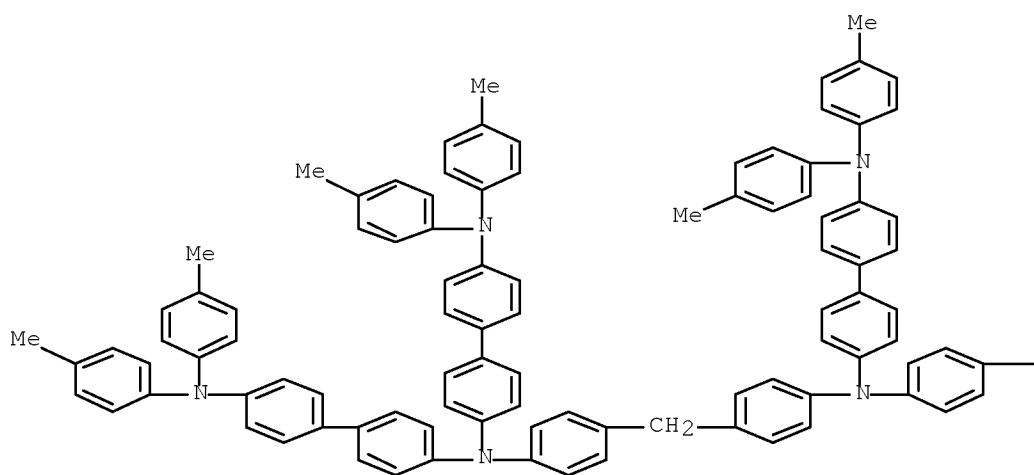


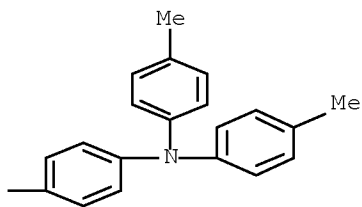
—NPh<sub>2</sub>

RN 167218-81-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(methylenedi-4,1-phenylene)bis[N-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-  
(9CI) (CA INDEX NAME)

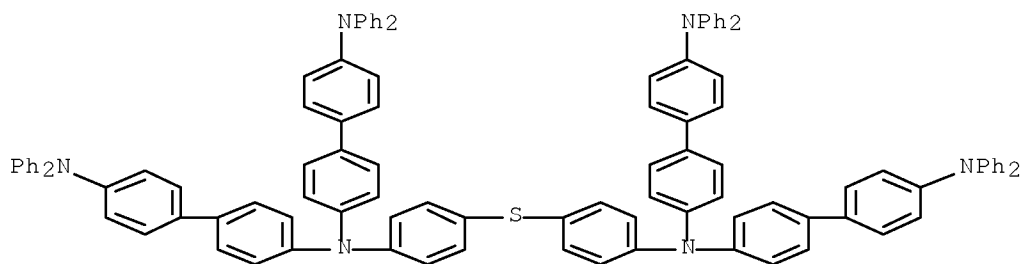
PAGE 1-A





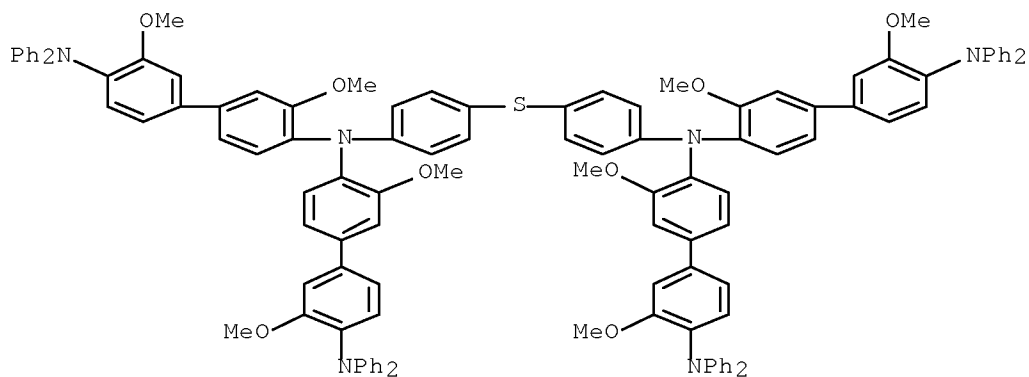
RN 167218-82-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(thiodi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



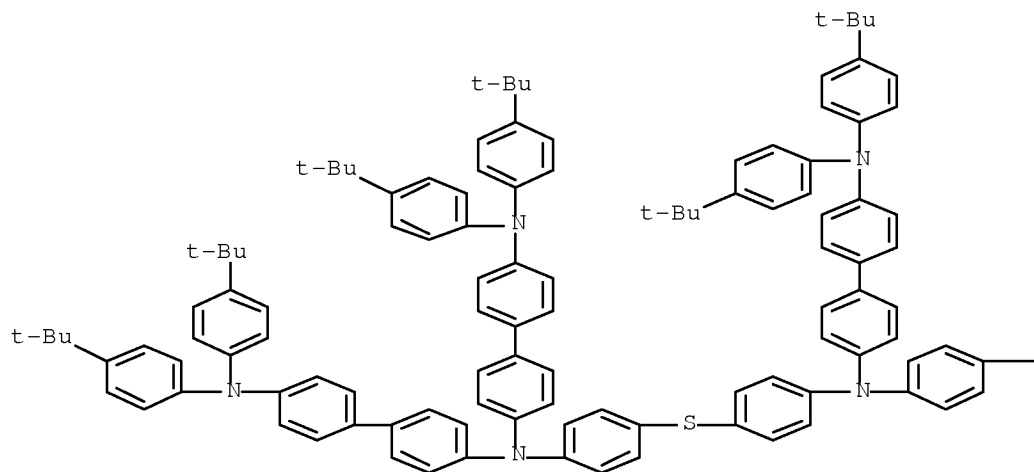
RN 167218-83-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(thiodi-4,1-phenylene)bis[N-[4'-(diphenylamino)-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N',N'-diphenyl- (9CI) (CA INDEX NAME)

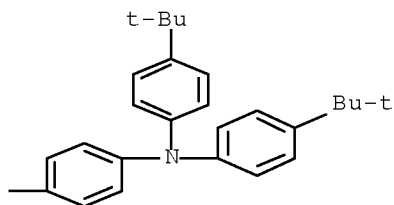


RN 167218-84-0 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(thiodi-4,1-phenylene)bis[N-[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N',N'-bis[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

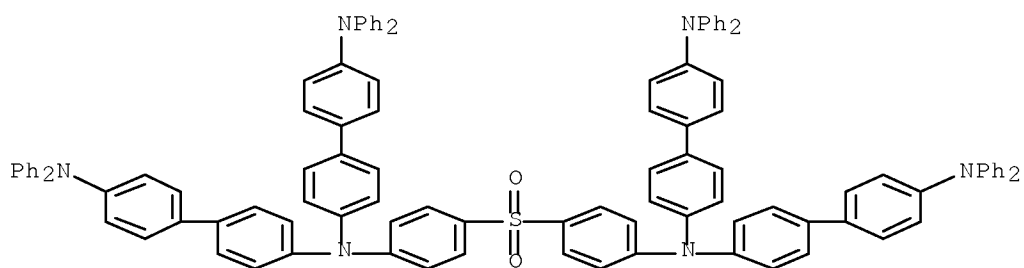


PAGE 1-B



RN 167218-85-1 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N-[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

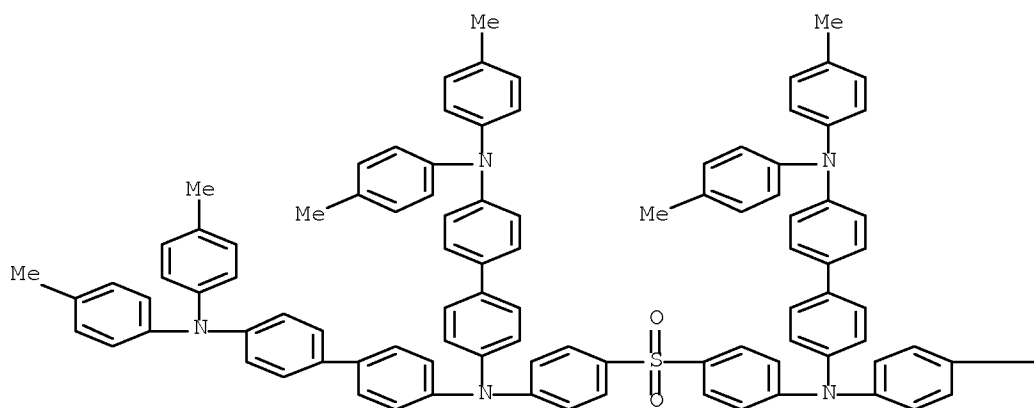




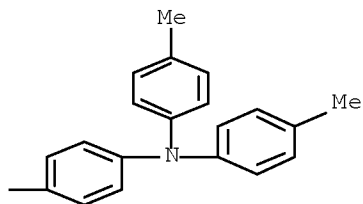
RN 167218-86-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(sulfonyldi-4,1-phenylene)bis[N-(4'-[bis(4-methylphenyl)amino]-[1,1'-biphenyl]-4-yl)-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



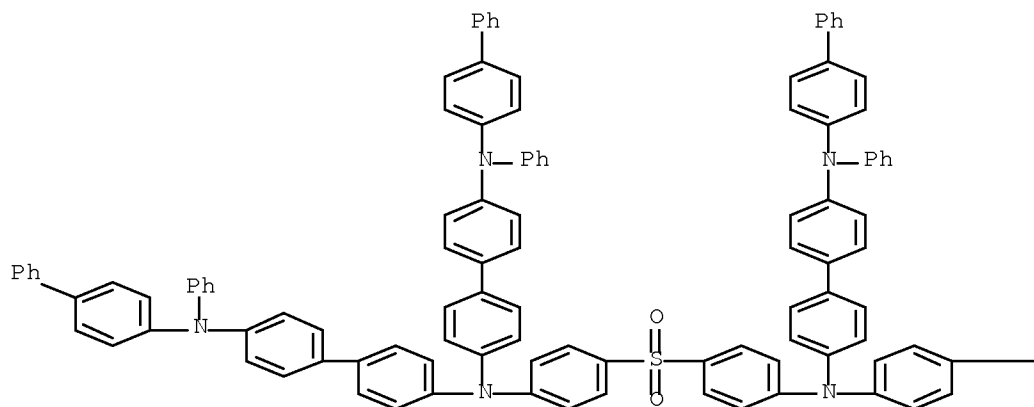
PAGE 1-B



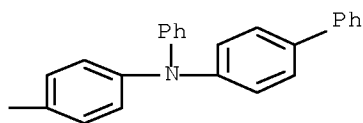
RN 167218-87-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(sulfonyldi-4,1-phenylene)bis[N'-[1,1'-biphenyl]-4-yl-N-[4'-([1,1'-biphenyl]-4-ylphenylamino)[1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

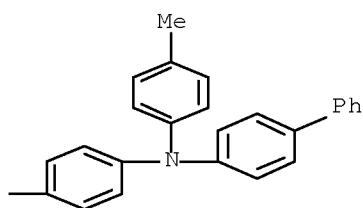
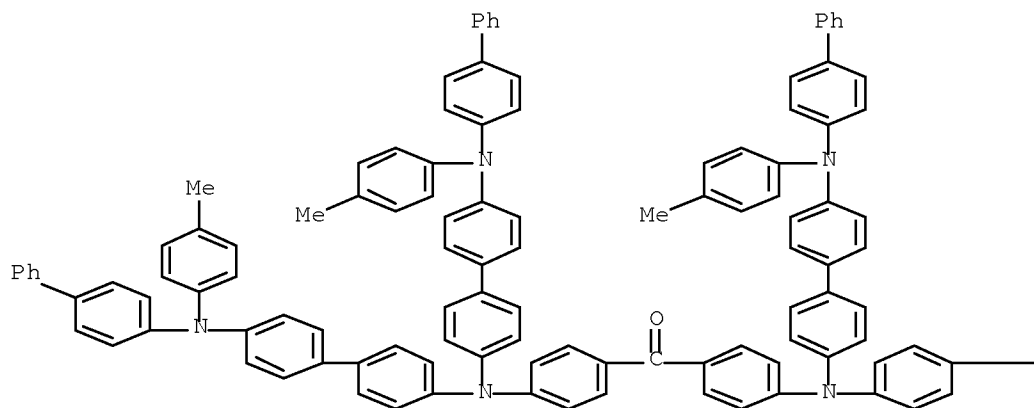


PAGE 1-B



RN 167218-88-4 CAPLUS

CN Methanone, bis[4-[bis[4'-([1,1'-biphenyl]-4-yl(4-methylphenyl)amino)[1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)



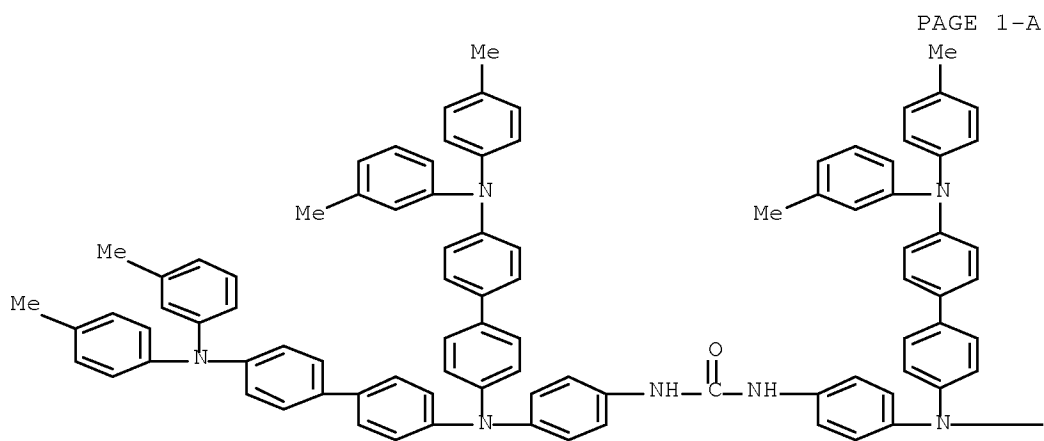
RN 167218-89-5 CAPLUS

CN Methanone, bis[4-[bis[3,3'-dichloro-4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)

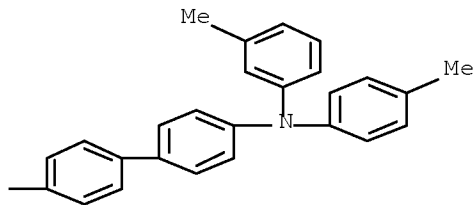
The chemical structure shows a central biphenyl core with a carbonyl group at the 4,4' position. Each phenyl ring of the biphenyl is connected via its 1-position to the nitrogen atom of a benzimidazole moiety. The benzimidazole ring consists of a benzene ring fused to an imidazole ring. The 2-position of the benzimidazole benzene ring is substituted with a 4-methylphenylamino group (N-phenyl-4-methylphenyl). The 6-positions of both benzimidazole benzene rings are substituted with a 2-chloro-4-(4-chloro-2-methylphenylamino)phenyl group. The 4-position of the biphenyl core is also substituted with a 2-chloro-4-(4-chloro-2-methylphenylamino)phenyl group. The structure is symmetrical and features multiple chlorine and methyl substituents.

Cc1ccc(N(c2cc(Cl)cc(c2)-c3ccccc3)c4ccccc4)cc1

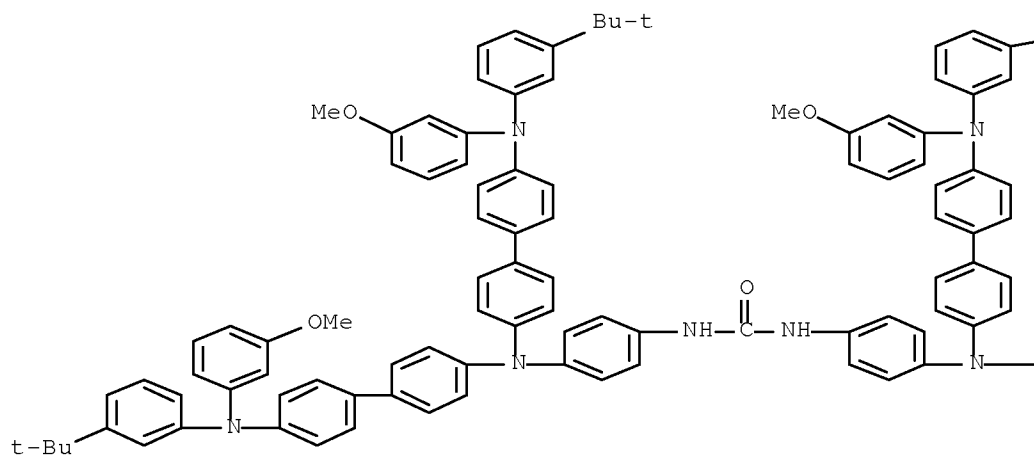
CN Urea, N,N'-bis[4-[bis[4'-(3-methylphenyl)(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)



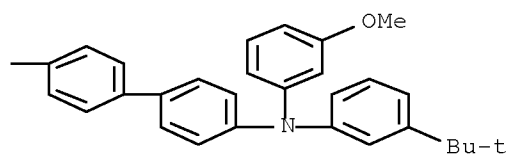
PAGE 1-B



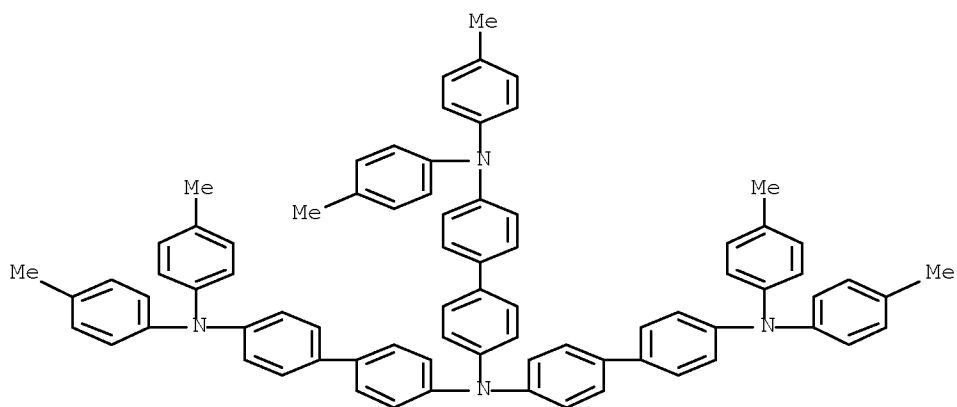
RN 167218-91-9 CAPLUS  
 CN Urea, N,N'-bis[4-[bis[4'-[[3-(1,1-dimethylethyl)phenyl](3-methoxyphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)



— Bu-t

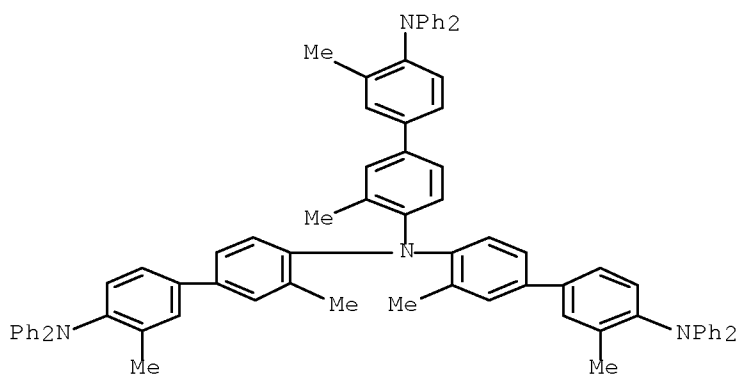


RN 167218-92-0 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



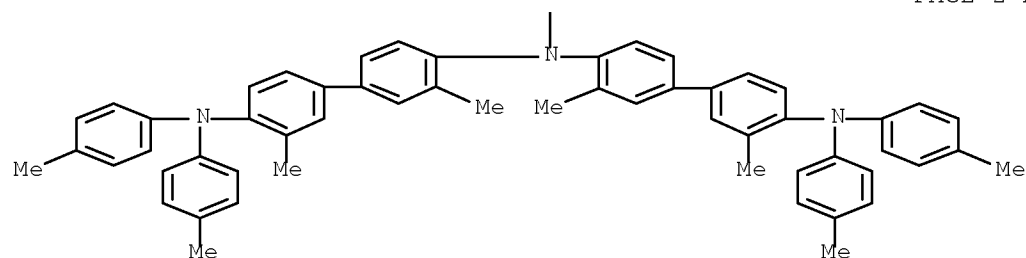
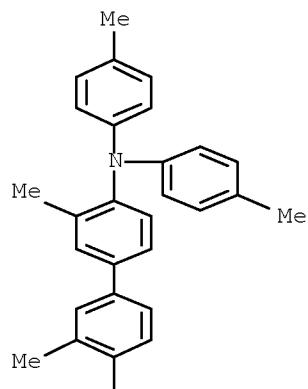
RN 167218-93-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-diphenyl- (9CI) (CA INDEX NAME)

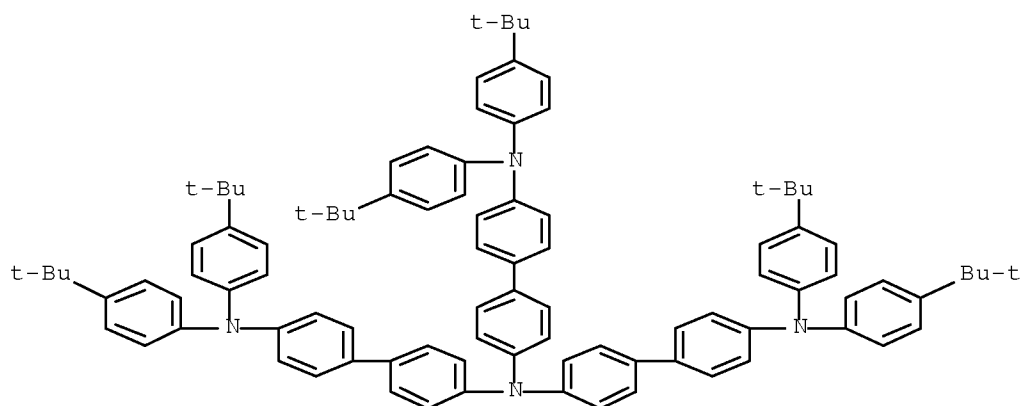


RN 167218-94-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methylphenyl)amino]-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



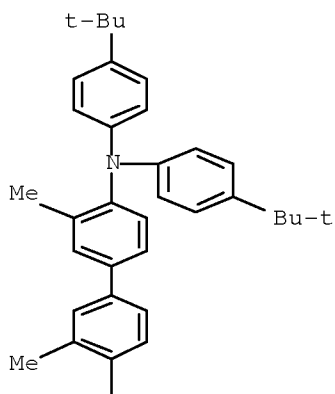
RN 167218-95-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



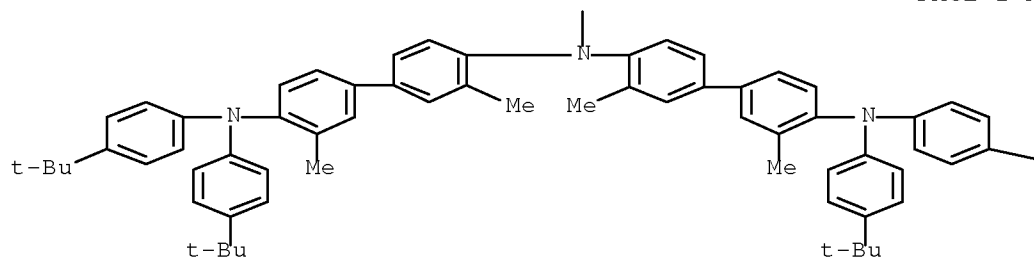


RN 167218-96-4 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino]-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]-3,3'-dimethyl- (CA INDEX NAME)

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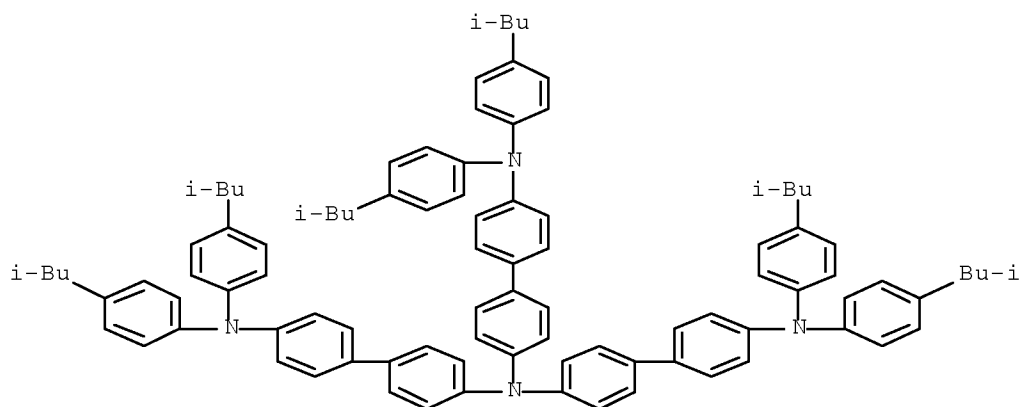


PAGE 2-B

— Bu-t

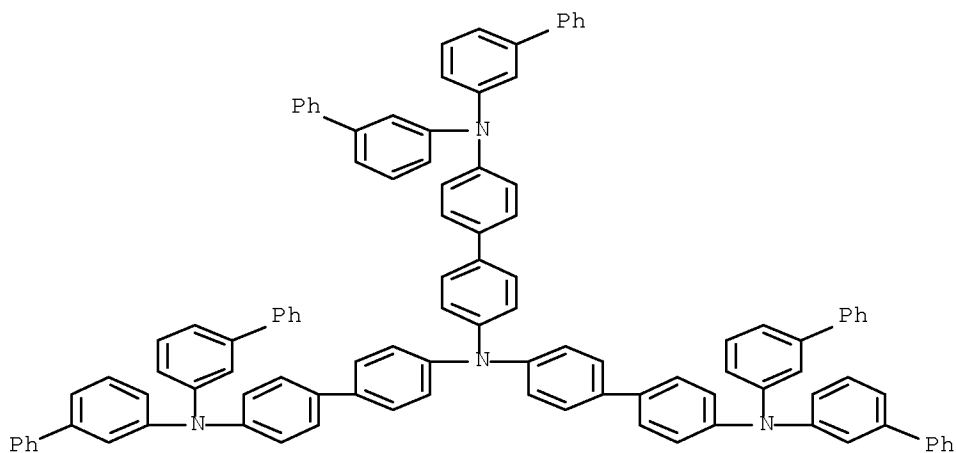
RN 167218-97-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(2-methylpropyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(2-methylpropyl)phenyl]- (CA INDEX NAME)



RN 167218-98-6 CAPLUS

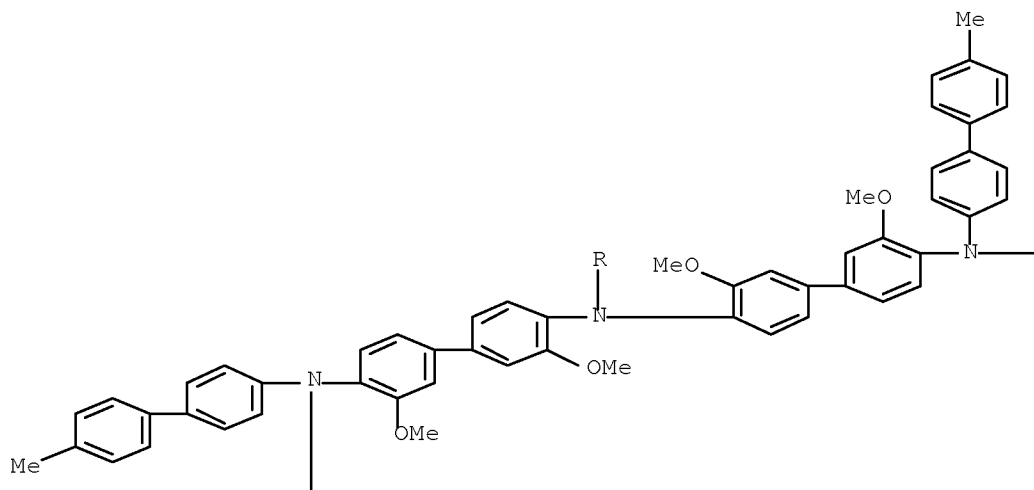
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis([1,1'-biphenyl]-3-yl)-N',N'-bis[4'-[bis([1,1'-biphenyl]-3-yl)amino][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



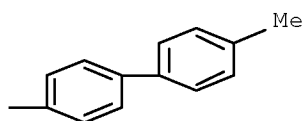
RN 167218-99-7 CAPLUS

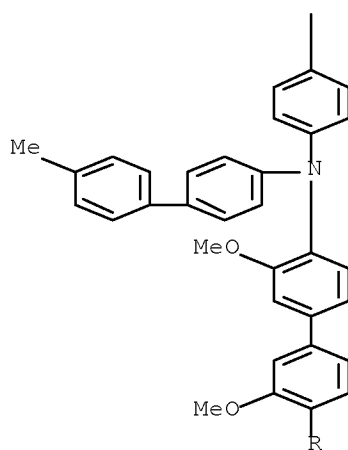
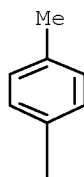
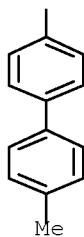
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(4'-methyl[1,1'-biphenyl]-4-yl)amino]-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N4',N4'-bis(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

PAGE 1-A

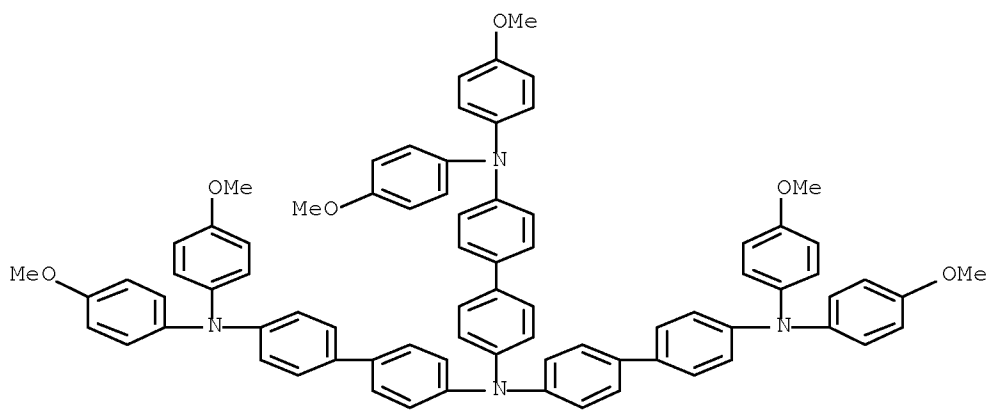


PAGE 1-B





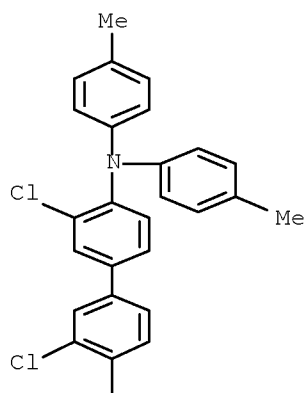
RN 167219-00-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methoxyphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



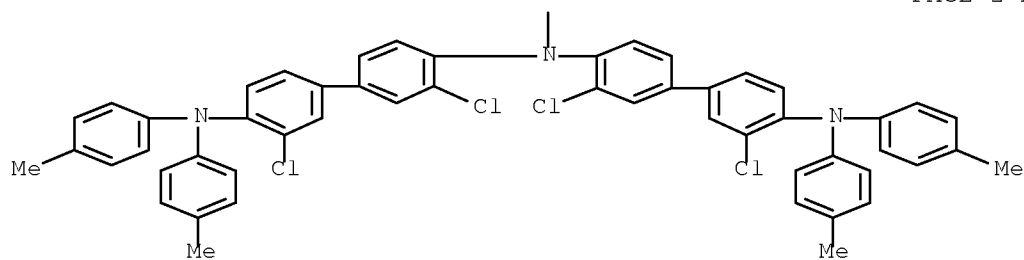
RN 167219-01-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methylphenyl)amino]-3,3'-dichloro[1,1'-biphenyl]-4-yl]-3,3'-dichloro-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

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PAGE 2-A

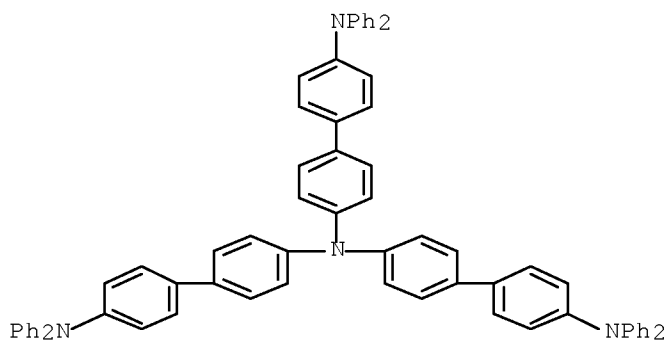


IT 128396-99-6P 167218-41-9P 167218-42-0P  
 167218-46-4P 167218-47-5P 167218-51-1P  
 167218-52-2P 167218-53-3P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)  
 (amine compound as electron-transporting material for  
 electroluminescent devices)

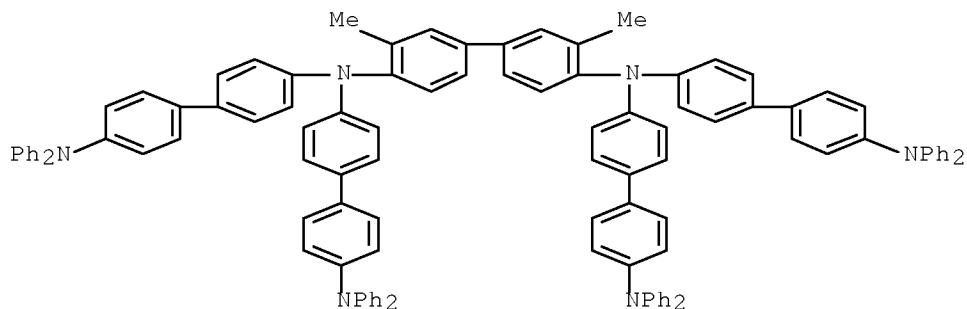
RN 128396-99-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-  
 4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



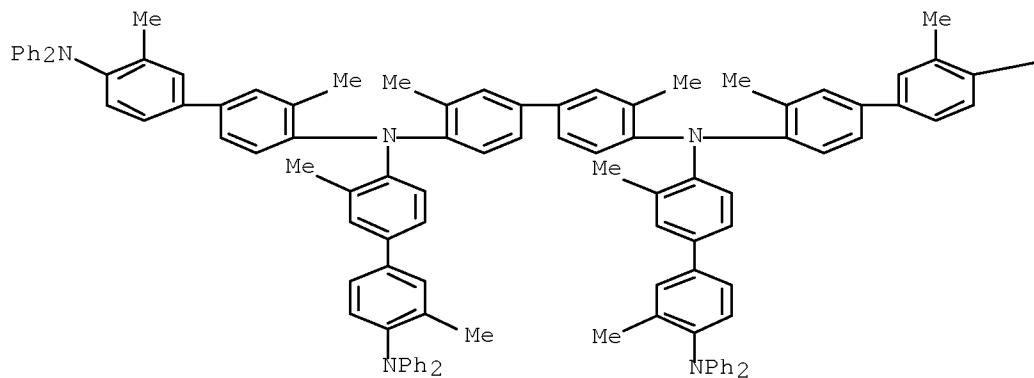
RN 167218-41-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(  
 (diphenylamino)[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



RN 167218-42-0 CAPLUS

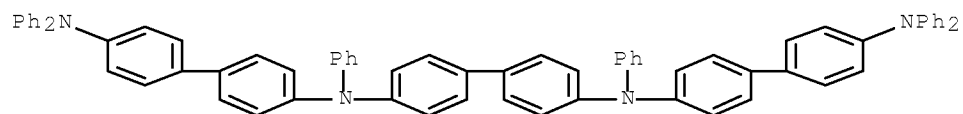
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)-  
 3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



—NPh<sub>2</sub>

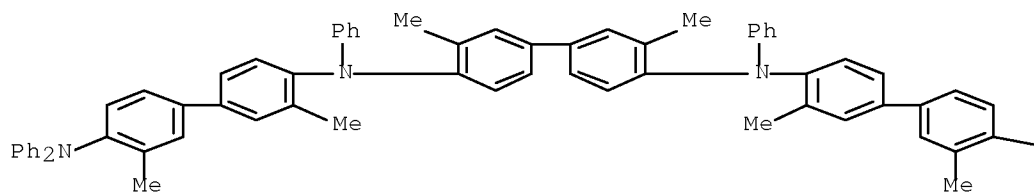
RN 167218-46-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4,N4'-diphenyl- (CA INDEX NAME)



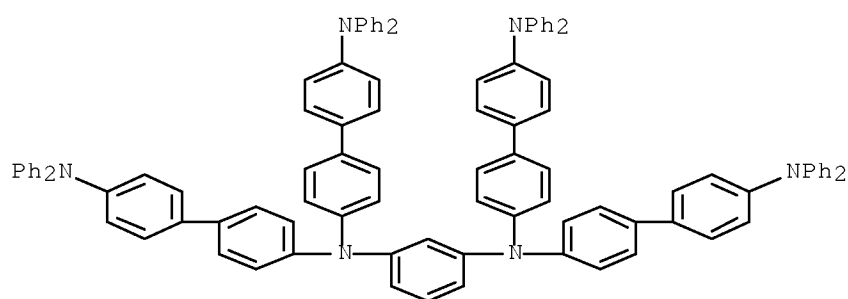
RN 167218-47-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N4,N4'-diphenyl- (CA INDEX NAME)

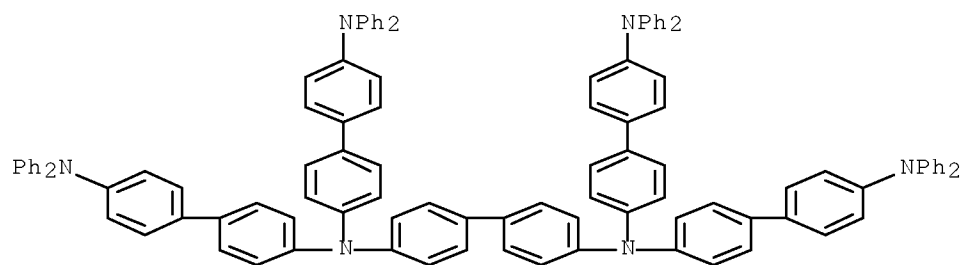


—NPh<sub>2</sub>

RN 167218-51-1 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,3-phenylenebis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

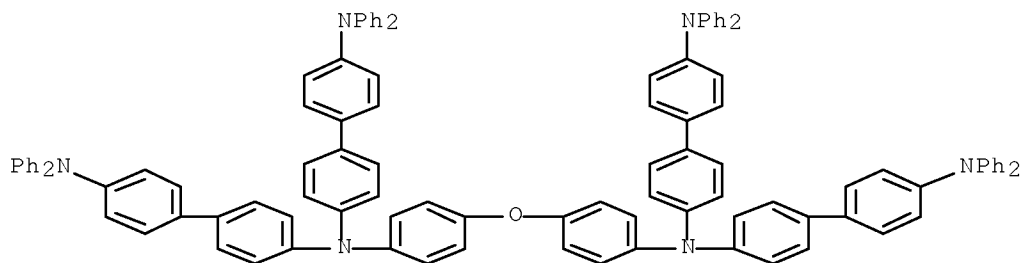


RN 167218-52-2 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N<sub>4</sub>,N<sub>4</sub>,N<sub>4</sub>',N<sub>4</sub>'-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



RN 167218-53-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(oxydi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)



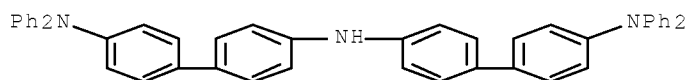


IT 167218-39-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(amine compound as electron-transporting material for electroluminescent devices)

RN 167218-39-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4'-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4,N4-diphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

L7 ANSWER 321 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:767930 CAPLUS Full-text

DOCUMENT NUMBER: 123:183055

ORIGINAL REFERENCE NO.: 123:32305a,32308a

TITLE: Field-effect electroluminescent device containing aminopyrene derivative

INVENTOR(S): Tamoto, Nozomi; Nagai, Kazukyo; Adachi, Chihaya; Sakon, Hirota

PATENT ASSIGNEE(S): Ricoh Kk, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

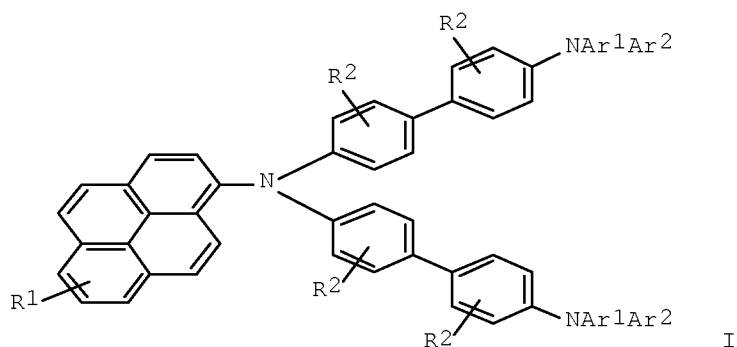
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07157754	A	19950620	JP 1993-338934	19931202
PRIORITY APPLN. INFO.:			JP 1993-338934	A 19931202
			JP 1993-280541	19931014

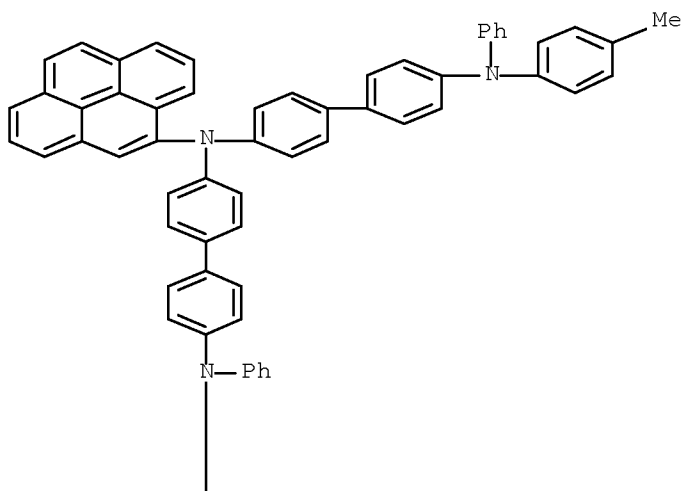
OTHER SOURCE(S): MARPAT 123:183055

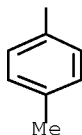
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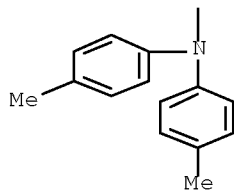
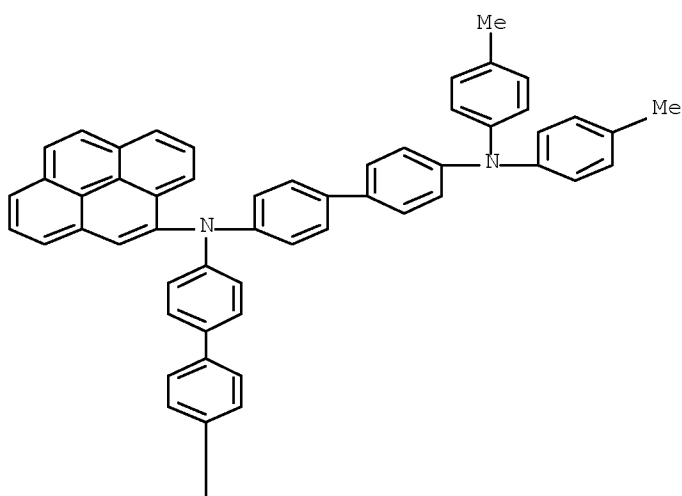
AB The device has  $\geq 1$  organic compound layer containing an aminopyrene derivative  
 I [R1-2 = H, halo, (substituted) alkyl, alkoxy, aryl; Ar1-2 = (substituted)  
 aryl] between an anode and a cathode. The device showed stable luminescence.  
 IT 167274-15-9 167274-16-0 167274-17-1  
 RL: DEV (Device component use); USES (Uses)  
 (field-effect ~~electroluminescent~~ device containing aminopyrene  
 derivative with stable luminescence)  
 RN 167274-15-9 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-[4'-[(4-  
 methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-phenyl-N'-4-pyrenyl-  
 (9CI) (CA INDEX NAME)

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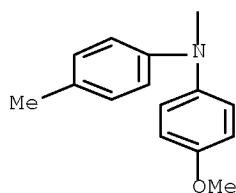
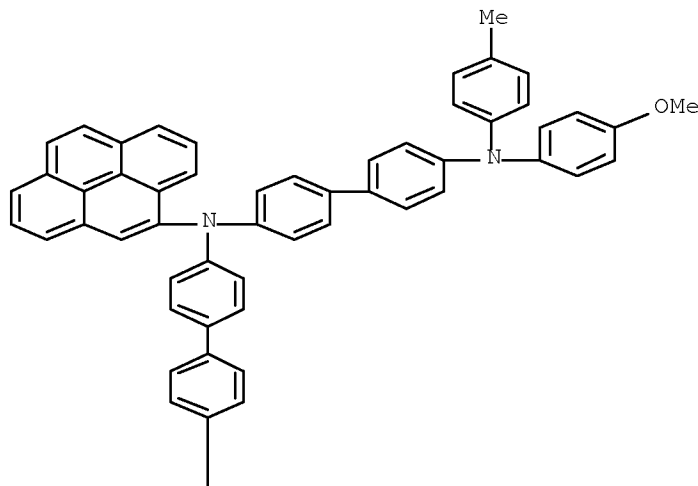




RN 167274-16-0 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-N-4-pyrenyl- (9CI) (CA INDEX NAME)



RN 167274-17-1 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4-(4-methoxyphenyl)-N4'-[4'-[(4-methoxyphenyl)(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4-(4-methylphenyl)-N4'-4-pyrenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

L7 ANSWER 322 OF 329 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1995:663074 CAPLUS Full-text  
 DOCUMENT NUMBER: 123:127048  
 ORIGINAL REFERENCE NO.: 123:22343a,22346a  
 TITLE: **Electroluminescent** element with oxadiazole  
 derivative electron-transporting layer  
 INVENTOR(S): Nagai, Kazukyo; Adachi, Chihaya; Sakon, Hirota;  
 Tamoto, Nozomi  
 PATENT ASSIGNEE(S): Ricoh Kk, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07109454	A	19950425	JP 1993-280179	19931012
JP 3482446	B2	20031222		

PRIORITY APPLN. INFO.:

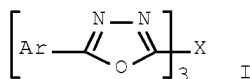
JP 1993-280179

19931012

OTHER SOURCE(S):

MARPAT 123:127048

GI



AB The title element has  $\geq 1$  organic compound layer,  $\geq 1$  of which contains an oxadiazole derivative I [Ar = (substituted) condensed polycyclic hydrocarbon, (substituted) aromatic heterocycle; X = trivalent group formed by removal of 3 H atoms from benzene ring], between an anode and a cathode. The organic compound layer may comprise  $\geq 1$  light-emitting layer and  $\geq 1$  electron-transporting layer,  $\geq 1$  of which contains I, optionally having  $\geq 1$  hole-transporting layer. The element showed bluish green emission with improved durability.

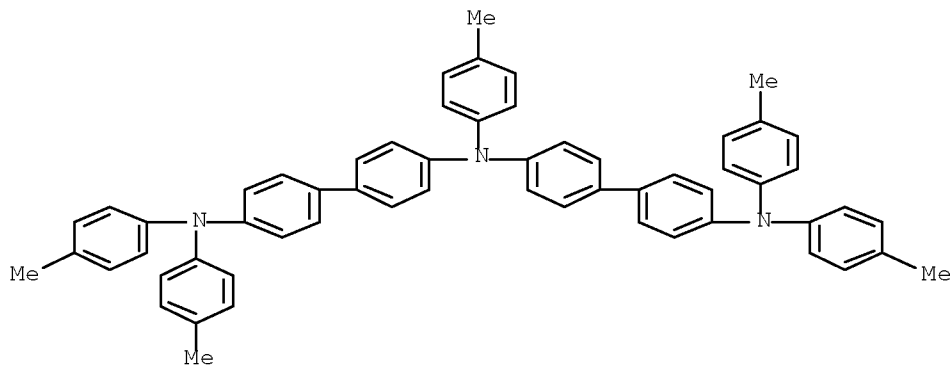
IT 134917-82-1

RL: DEV (Device component use); USES (Uses)

(hole-transporting layer; ~~electroluminescent~~ devices containing oxadiazole derivative electron-transporting layers)

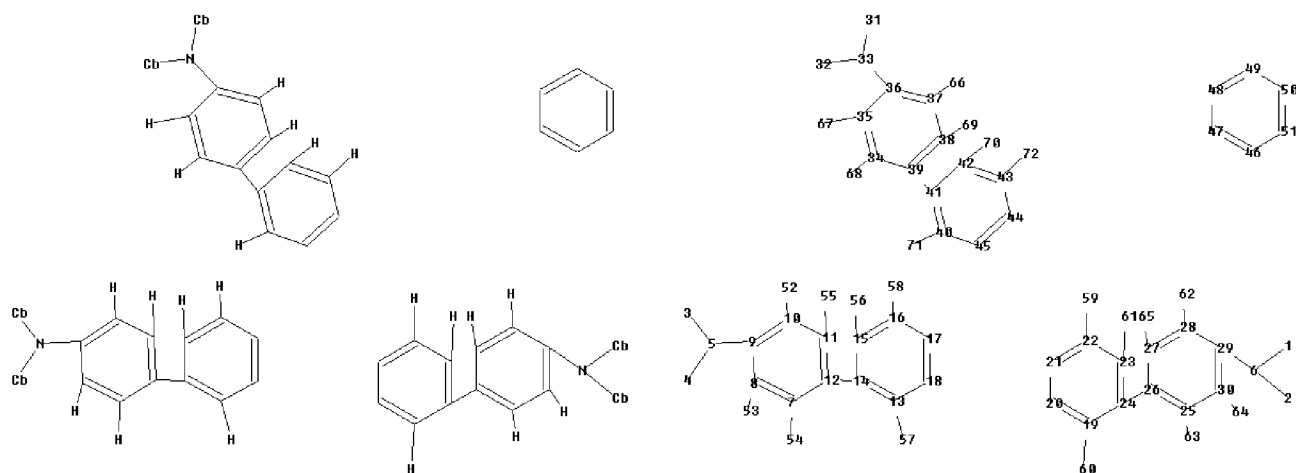
RN 134917-82-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4',N4'-tris(4-methylphenyl)- (CA INDEX NAME)



=>

Uploading C:\Program Files\STNEXP\Queries\10594239#1.str



chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60 61 62 63 64  
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58  
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 33-36 34-68  
35-67 37-66  
38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60  
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66  
38-69 39-41 40-71  
42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom  
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
31:Atom 32:Atom  
33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom  
42:Atom 43:Atom

44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS  
 53:CLASS 54:CLASS  
 55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS  
 63:CLASS 64:CLASS  
 65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS  
 Generic attributes :

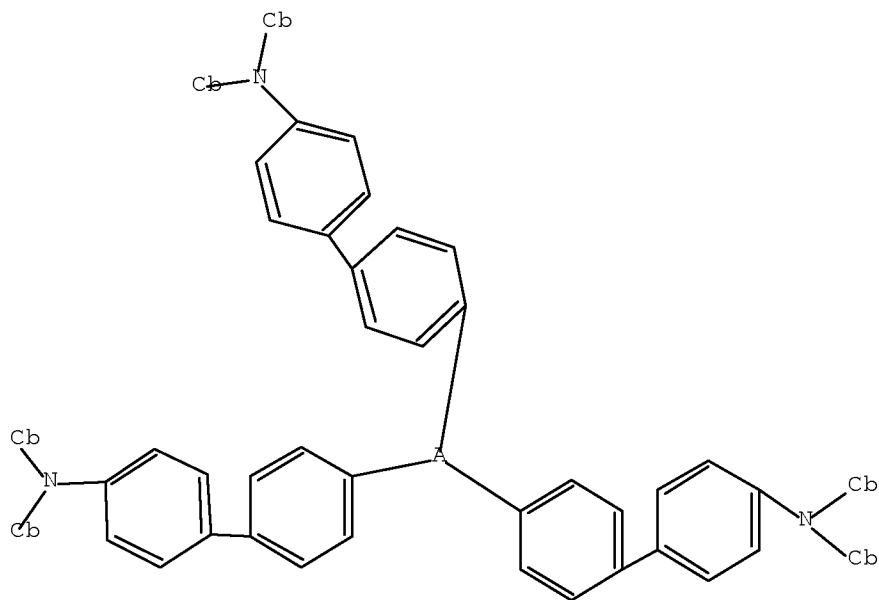
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 Saturation : Unsaturated  
 2:  
 Saturation : Unsaturated  
 3:  
 Saturation : Unsaturated  
 4:  
 Saturation : Unsaturated  
 31:  
 Saturation : Unsaturated  
 32:  
 Saturation : Unsaturated

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 10:57:41 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 1742 TO ITERATE

100.0% PROCESSED 1742 ITERATIONS 4 ANSWERS  
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*  
PROJECTED ITERATIONS: 32337 TO 37343  
PROJECTED ANSWERS: 4 TO 200

L2 4 SEA SSS SAM L1

=> s l1 full  
FULL SEARCH INITIATED 10:57:49 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 34591 TO ITERATE

100.0% PROCESSED 34591 ITERATIONS 47 ANSWERS  
SEARCH TIME: 00.00.01

L3 47 SEA SSS FUL L1

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

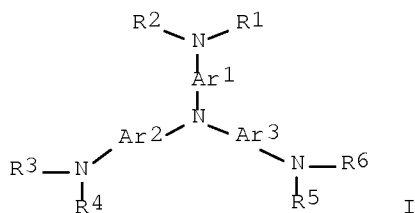
=> s l3  
L4 43 L3

=> d ibib abs hitstr 37-43

L4 ANSWER 37 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1997:480901 CAPLUS Full-text  
DOCUMENT NUMBER: 127:115061  
ORIGINAL REFERENCE NO.: 127:22069a,22072a  
TITLE: Hole-transporting material and use thereof  
INVENTOR(S): Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio  
PATENT ASSIGNEE(S): Toyo Ink Manufacturing Co., Ltd., Japan  
SOURCE: Eur. Pat. Appl., 32 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
EP 779765	A2	19970618	EP 1996-309019	19961211
EP 779765	A3	19970730		
EP 779765	B1	20010801		
R: DE, FR, GB				
JP 09222741	A	19970826	JP 1996-306049	19961118
PRIORITY APPLN. INFO.:			JP 1995-321345	A 19951211
			JP 1996-306049	A 19961118
OTHER SOURCE(S):	MARPAT	127:115061		
GI				





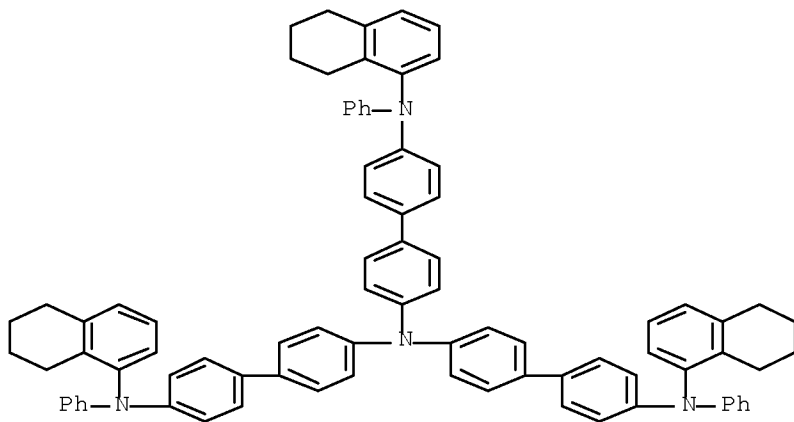
AB Hole-transporting materials comprise triaryl amines described by the general formula I (R1-6 = (un)substituted aryl groups; and Ar1-3 = (un)substituted arylene groups, with the restriction that  $\geq 1$  of R1-6 = comprises fused aromatic rings or is an aryl group having a cycloalkyl ring). Organic electroluminescent devices and electrophotog. photoreceptors employing the materials are also described.

IT 192181-14-9

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(aryl amine hole-transporting materials and apparatus using them)

RN 192181-14-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-phenyl-N',N'-bis[4'-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino][1,1'-biphenyl]-4-yl]-N-(5,6,7,8-tetrahydro-1-naphthalenyl)- (9CI) (CA INDEX NAME)



L4 ANSWER 38 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:269788 CAPLUS Full-text

DOCUMENT NUMBER: 126:349527

ORIGINAL REFERENCE NO.: 126:67847a,67850a

TITLE: Thermal stability in oligomeric  
triphenylamine/tris(8-quinolinolato) aluminum  
electroluminescent devices

AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada,  
Akane; Taga, Yasunori

CORPORATE SOURCE: Toyota Central Research and Development Laboratories,  
Inc., Nagakute, 480-11, Japan

SOURCE: Applied Physics Letters (1997), 70(15), 1929-1931

CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thermal stability of the electroluminescent (EL) devices using various hole-transporting materials based on triphenylamine, and a typical emitting material, tris(8-quinolinolato) Al was systematically studied. The thermal stability of the EL devices is clearly seen to depend on the glass transition temperature (Tg) of the hole-transporting material. The highest thermal stability up to 155° was obtained in the device using the pentamer of triphenylamine. The linear linkage of triphenylamine is useful to attain high Tg rather than the branch linkage.

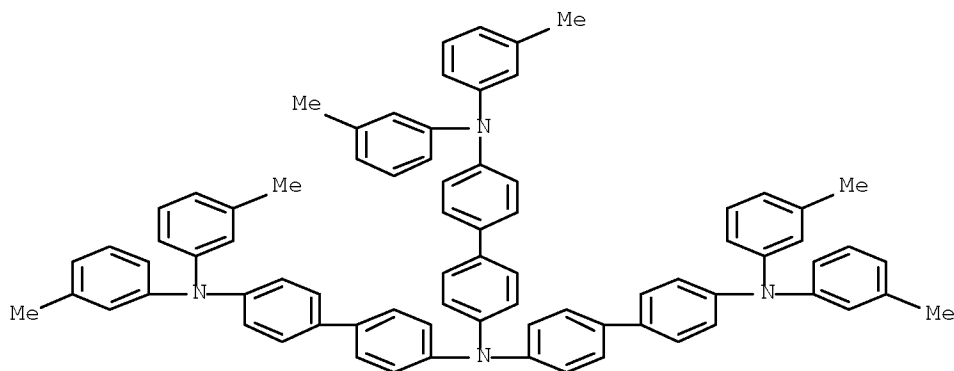
IT 189196-95-0

RL: DEV (Device component use); USES (Uses)

(thermal stability in oligomeric triphenylamine/tris(8-quinolinolato) aluminum electroluminescent devices)

RN 189196-95-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis(3-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 171 THERE ARE 171 CAPLUS RECORDS THAT CITE THIS RECORD (172 CITINGS)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 39 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:224293 CAPLUS Full-text

DOCUMENT NUMBER: 126:299493

ORIGINAL REFERENCE NO.: 126:57857a,57860a

TITLE: Thermal stability of electroluminescent devices

AUTHOR(S): fabricated using novel charge-transporting materials  
Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori

CORPORATE SOURCE: Toyota Central Research and Development Laboratories  
Inc., Aichi, 480-11, Japan

SOURCE: Polymer Preprints (American Chemical Society, Division  
of Polymer Chemistry) (1997), 38(1), 388-389  
CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer  
Chemistry

DOCUMENT TYPE: Journal

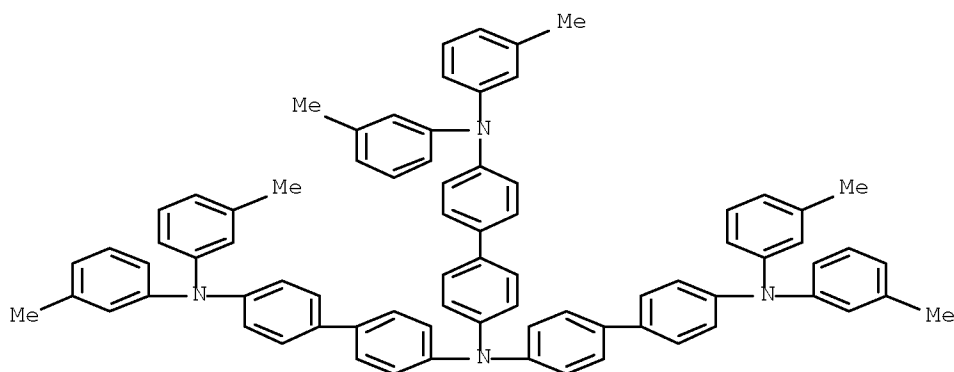
LANGUAGE: English

AB Novel electron- and hole-transporting materials for the electroluminescent devices are described. The basic structures of the hole-transporting materials are a linear or branch linkages of triphenylamine moiety. The electron-transporting materials are based on oxadiazole moiety with branched or twisted structures. The electroluminescent characteristics of these materials and devices based on them are also presented.

IT 189196-95-0  
 RL: DEV (Device component use); PRP (Properties); USES (Uses)  
 (thermal stability of electroluminescent devices fabricated using novel charge-transporting materials)

RN 189196-95-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis(3-methylphenyl)- (CA INDEX NAME)



OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD  
 (6 CITINGS)

L4 ANSWER 40 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:90283 CAPLUS Full-text

DOCUMENT NUMBER: 126:111013

ORIGINAL REFERENCE NO.: 126:21331a,21334a

TITLE: Electrophotographic photoconductor containing tetramine or hexamine

INVENTOR(S): Tomyama, Hiromitsu; Ihara, Ikuko; Watanabe, Takanobu; Anzai, Mitsutoshi

PATENT ASSIGNEE(S): Hodogaya Chemical Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.  
 CODEN: JKXXAF

DOCUMENT TYPE: Patent

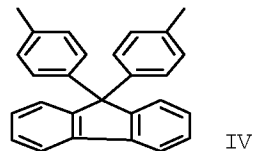
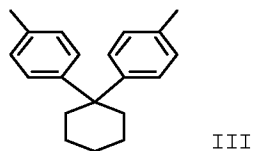
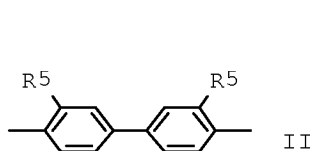
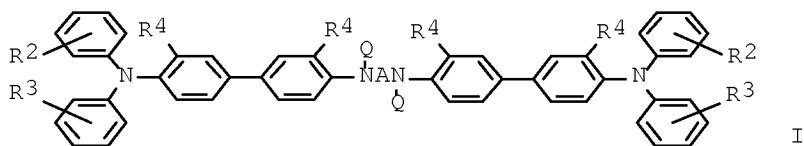
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08292586	A	19961105	JP 1995-119066	19950421
PRIORITY APPLN. INFO.:			JP 1995-119066	19950421
OTHER SOURCE(S):	MARPAT	126:111013		

GI



AB The photoconductor contains tetramine I [Q = R<sub>1</sub>C<sub>6</sub>H<sub>4</sub>; R<sub>1-3</sub> = H, lower alkyl, lower alkoxy, (substituted) phenyl; R<sub>4</sub> = H, lower alkyl, lower alkoxy, Cl; A = m-C<sub>6</sub>H<sub>4</sub>, p-C<sub>6</sub>H<sub>4</sub>, 9,10-anthracenediyl, II, naphthalenediyl, III, IV, p-C<sub>6</sub>H<sub>4</sub>-p-XC<sub>6</sub>H<sub>4</sub>; R<sub>5</sub> = H, lower alkyl, lower alkoxy, Cl; X = CH<sub>2</sub>, CHPh, O, S] as charge-transporting agent. The photoconductor shows good heat resistance, prevention of crystallization, high sensitivity, and good durability.

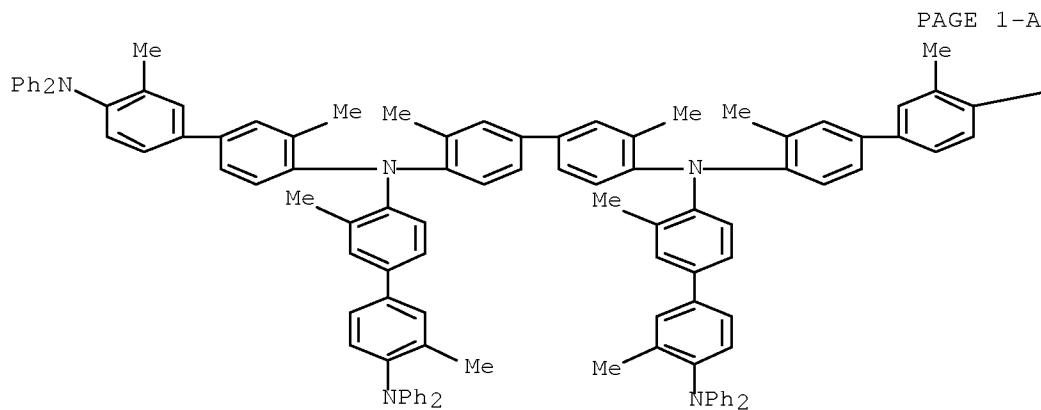
IT 167218-42-0P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(charge-transporting agent; electrophotog. photoconductor containing tetramine or hexamine as charge-transporting agent)

RN 167218-42-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N<sub>4</sub>,N<sub>4</sub>,N<sub>4</sub>',N<sub>4</sub>'-tetrakis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



PAGE 1-B

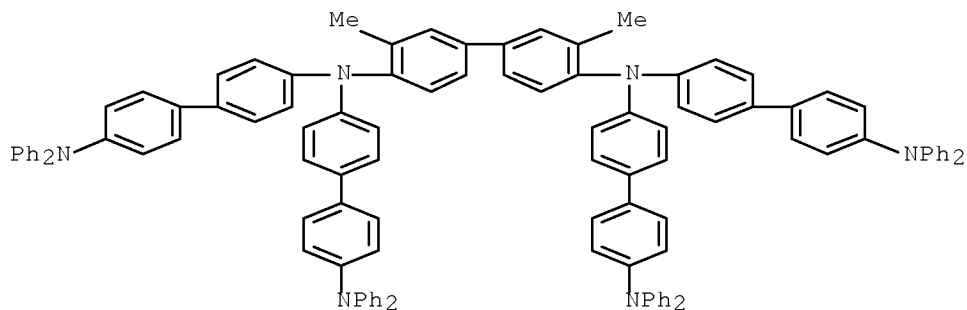
—NPh<sub>2</sub>

IT 167218-41-9

RL: TEM (Technical or engineered material use); USES (Uses)  
(charge-transporting agent; electrophotog. photoconductor containing  
tetramine or hexamine as charge-transporting agent)

RN 167218-41-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-  
(diphenylamino)[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD  
(1 CITINGS)

L4 ANSWER 41 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:740336 CAPLUS Full-text

DOCUMENT NUMBER: 126:39393

ORIGINAL REFERENCE NO.: 126:7708h,7709a

TITLE: Electroluminescent device

INVENTOR(S): Fukuyama, Masao; Suzuki, Mutsumi; Murakami, Mutsuaki

PATENT ASSIGNEE(S): Matsushita Electric Ind Co Ltd, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

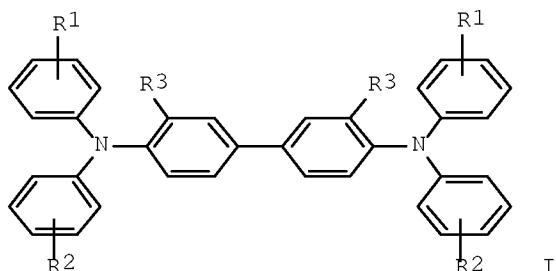
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08259934	A	19961008	JP 1995-60749	19950320
JP 3449020	B2	20030922		
PRIORITY APPLN. INFO.:			JP 1995-60749	19950320
OTHER SOURCE(S):	MARPAT 126:39393			

GI



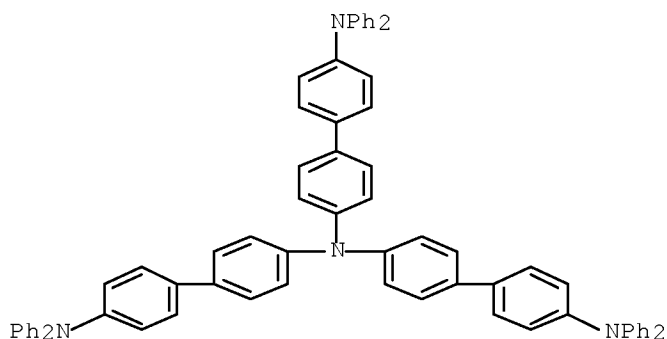
AB An electroluminescent device, suited for use in display devices, comprises a light-emitting layer placed next to a mixed layer which is composed of amine compds. and the light-emitting material used in the light-emitting layer, wherein the amine compound is represented by I (R1, R2 = H, Ph, lower mol. weight alkyl or alkoxy group substituted Ph, lower mol. weight alkyl and alkoxy groups; R3 = H, Me, methoxy, and Cl; one of R1 and R2 is iso-Bu, sec-Bu, tert-Bu, Ph, lower mol. weight alkyl substituted Ph, or lower mol. weight alkoxy substituted phenyl).

IT 128396-99-6 167218-52-2 167218-75-9  
167218-95-3 167218-97-5 184033-65-6  
184033-66-7

RL: DEV (Device component use); USES (Uses)  
(hole transport material for electroluminescent device)

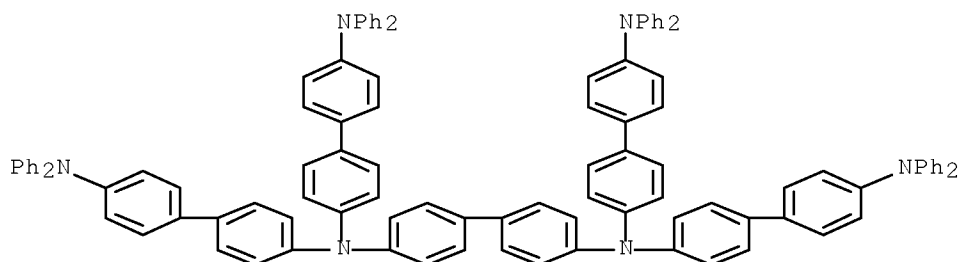
RN 128396-99-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



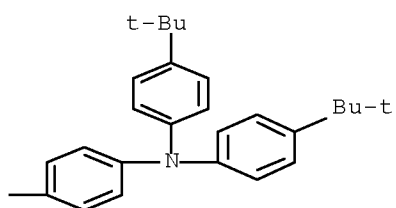
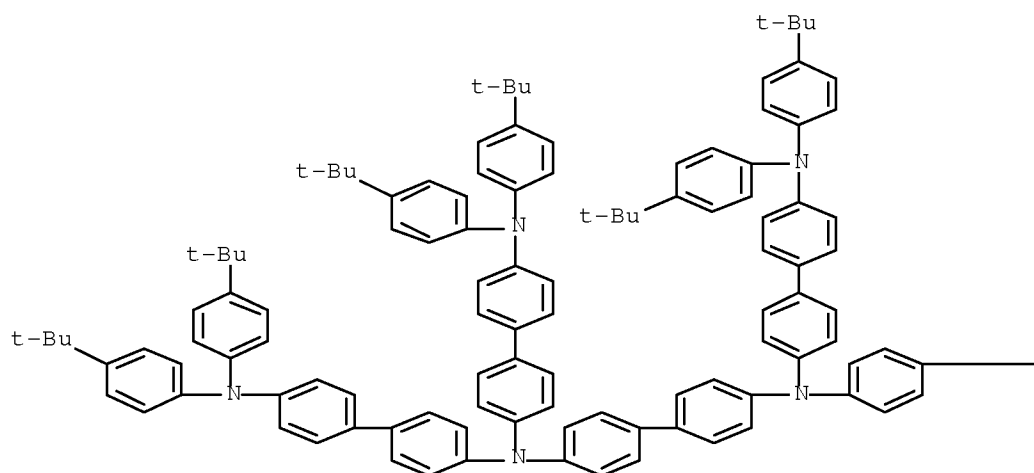
RN 167218-52-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

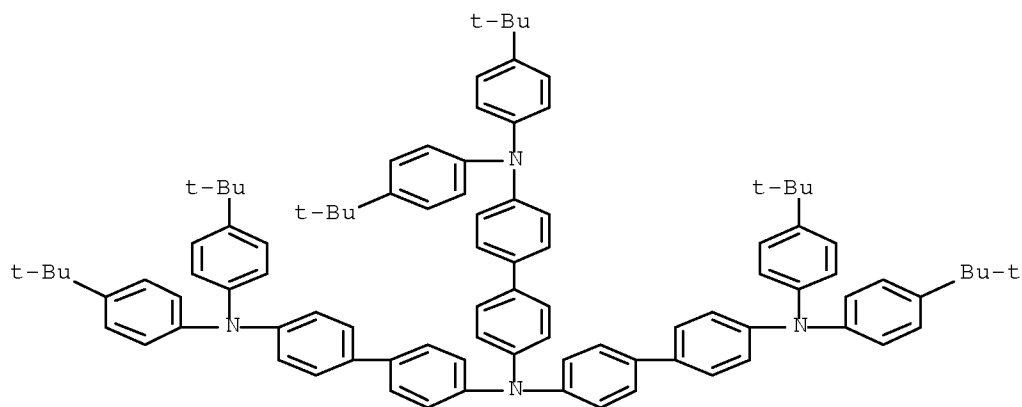


RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

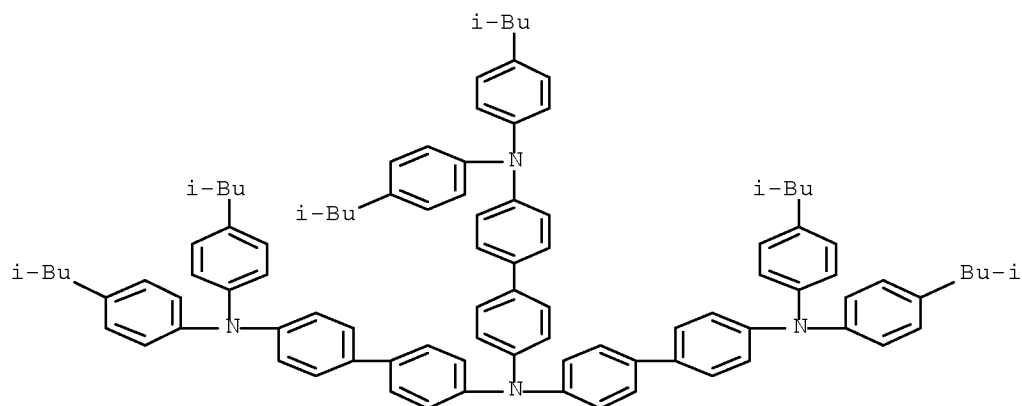


RN 167218-95-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)



RN 167218-97-5 CAPLUS

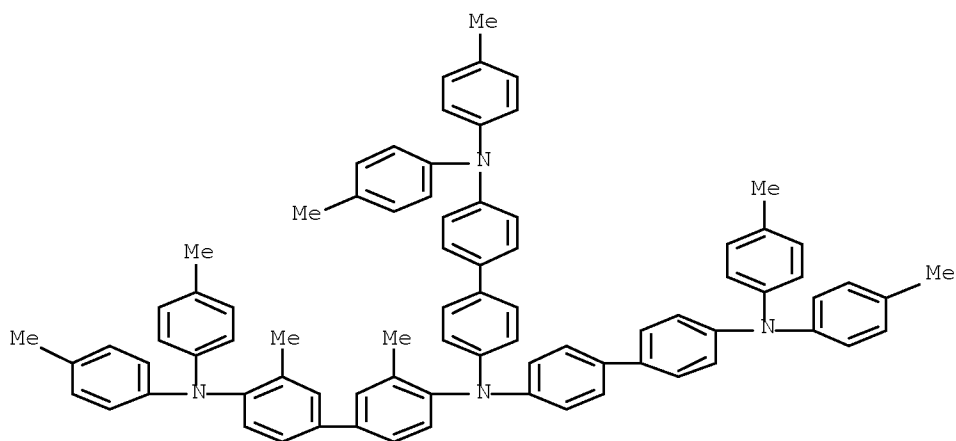
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(2-methylpropyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(2-methylpropyl)phenyl]- (CA INDEX NAME)



RN 184033-65-6 CAPLUS

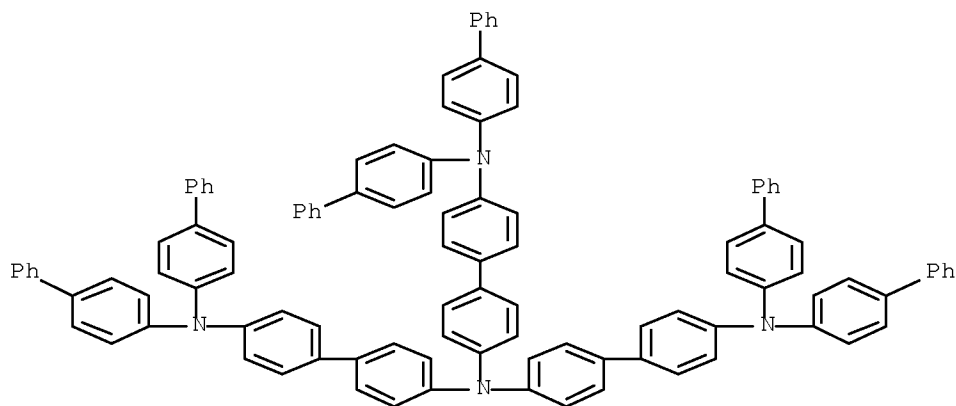
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N4',N4'-bis(4-methylphenyl)- (CA INDEX NAME)





RN 184033-66-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis([1,1'-biphenyl]-4-yl)-N4',N4'-bis[4'-[bis([1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L4 ANSWER 42 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:769803 CAPLUS Full-text

DOCUMENT NUMBER: 123:183664

ORIGINAL REFERENCE NO.: 123:32405a,32408a

TITLE: Amine compound and electro-luminescence device comprising same.

INVENTOR(S): Tomiyama, Hiromitsu; Oshino, Masahiko; Nakanishi, Naoko; Suzuki, Mutsumi; Fukuyama, Masao; Murakami, Mutsuaki; Nambu, Taro

PATENT ASSIGNEE(S): Hodogaya Chemical Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.

SOURCE: Eur. Pat. Appl., 98 pp.

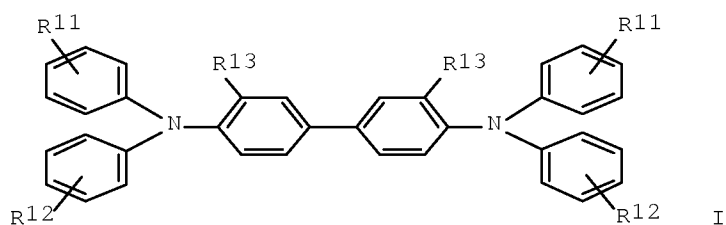
CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 650955	A1	19950503	EP 1994-117206	19941031
EP 650955	B1	19980819		
R: DE, FR, GB				
JP 07126615	A	19950516	JP 1993-273883	19931101
JP 3194657	B2	20010730		
JP 07126225	A	19950516	JP 1993-293800	19931101
JP 3574860	B2	20041006		
JP 07126226	A	19950516	JP 1993-293801	19931101
JP 3220950	B2	20011022		
JP 2001273978	A	20011005	JP 2001-49489	19931101
JP 3529735	B2	20040524		
JP 07331238	A	19951219	JP 1994-132744	19940615
JP 08003122	A	19960109	JP 1994-155470	19940615
JP 08100172	A	19960416	JP 1994-236622	19940930
JP 3274939	B2	20020415		
JP 2001181240	A	20010703	JP 2000-332663	20001031
JP 3567323	B2	20040922		
JP 2002343577	A	20021129	JP 2002-83871	20020325
JP 3745296	B2	20060215		
JP 2004182740	A	20040702	JP 2004-21884	20040129
JP 3880967	B2	20070214		
PRIORITY APPLN. INFO.:			JP 1993-273883	A 19931101
			JP 1993-293800	A 19931101
			JP 1993-293801	A 19931101
			JP 1994-132744	A 19940615
			JP 1994-155470	A 19940615
			JP 1994-236622	A 19940930
			JP 2001-49489	A3 19931101

OTHER SOURCE(S): MARPAT 123:183664  
 GI



AB Novel amine compds. useful as electron-transporting materials to be incorporated in organic electro-luminescence (EL) devices are described, e.g., having the formula I [R1, R2 = H, alkyl, alkoxy, Ph, alkylphenyl, alkoxyphenyl, with the proviso that  $\geq 1$  of R1 and R2 is n-Bu, i-Bu, sec-Bu, tert-Bu, Ph, alkoxyphenyl, alkylphenyl; R3 = H, alkyl, alkoxy, Cl]. Five more Markush structures are given. The organic EL device can find wide application in various display units, requires a low applied voltage and exhibits a high luminance and an excellent stability.

IT 167218-75-9 167218-92-0 167218-93-1

167218-94-2    167218-95-3    167218-96-4  
 167218-97-5    167218-98-6    167218-99-7  
 167219-00-3    167219-01-4

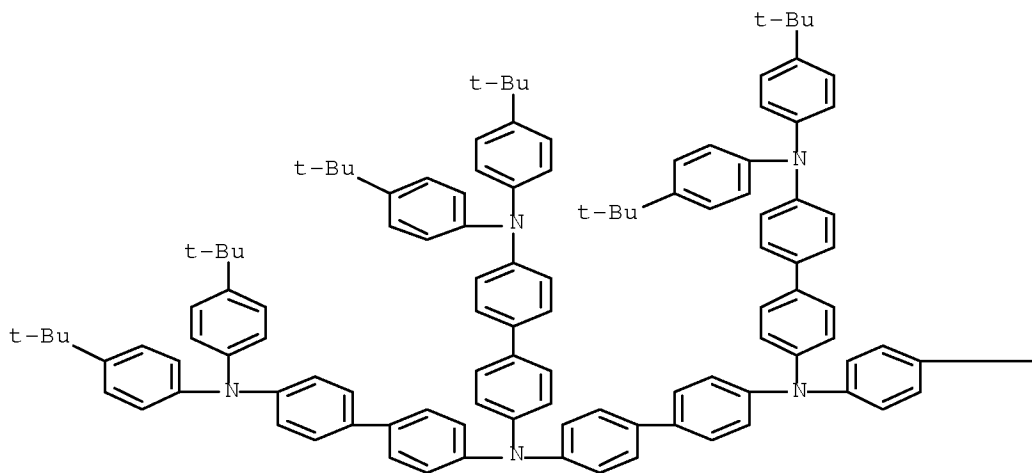
RL: DEV (Device component use); USES (Uses)

(amine compound as electron-transporting material for electroluminescent devices)

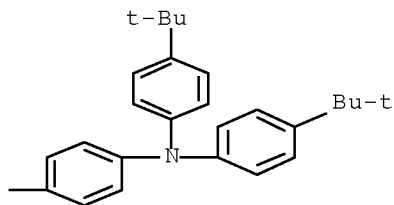
RN 167218-75-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

PAGE 1-A

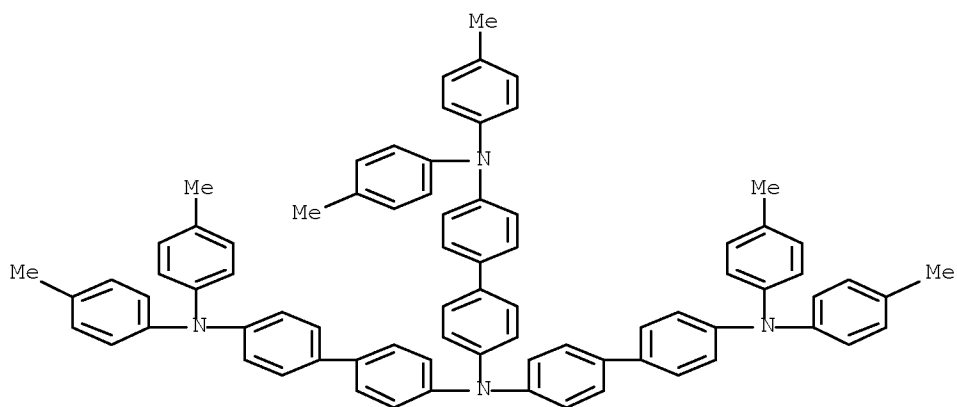


PAGE 1-B



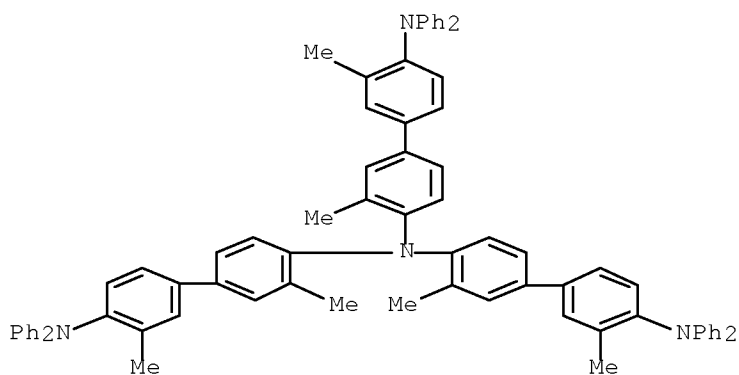
RN 167218-92-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



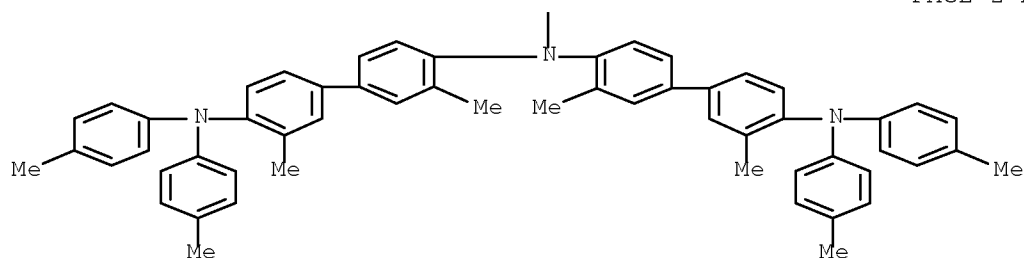
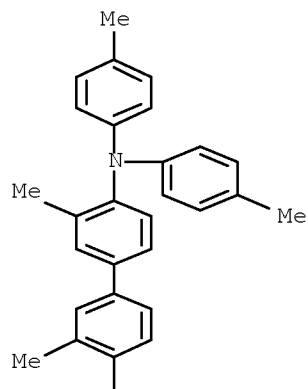
RN 167218-93-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-(diphenylamino)-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-diphenyl- (9CI) (CA INDEX NAME)



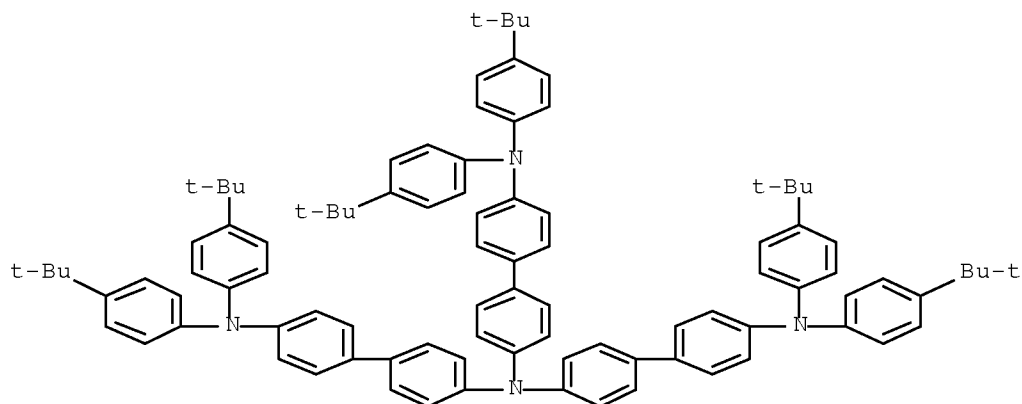
RN 167218-94-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methylphenyl)amino]-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



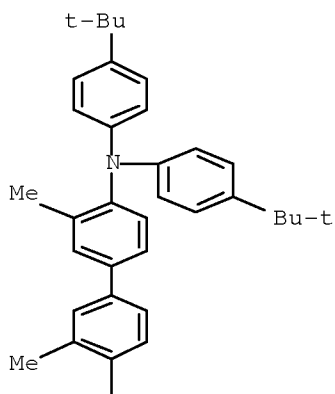
RN 167218-95-3 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]- (CA INDEX NAME)

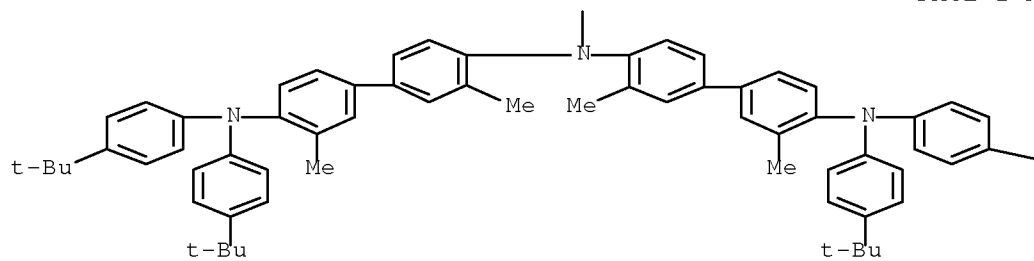


RN 167218-96-4 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino]-3,3'-dimethyl[1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(1,1-dimethylethyl)phenyl]-3,3'-dimethyl- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

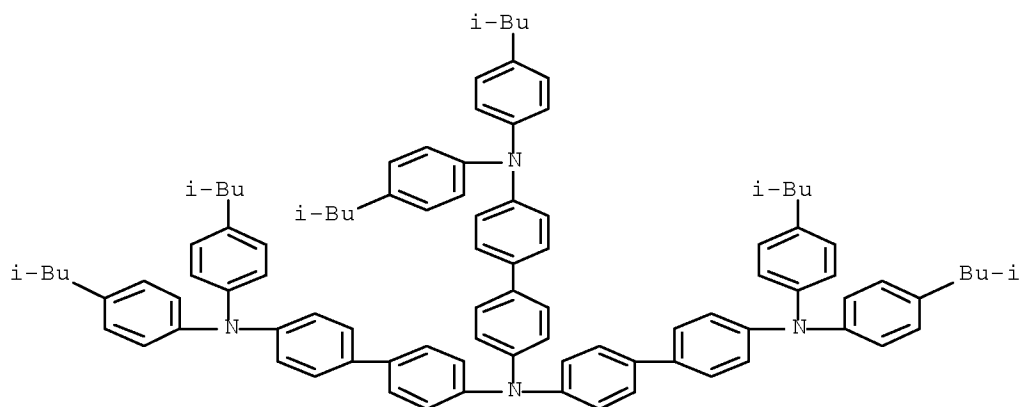


PAGE 2-B

— Bu-t

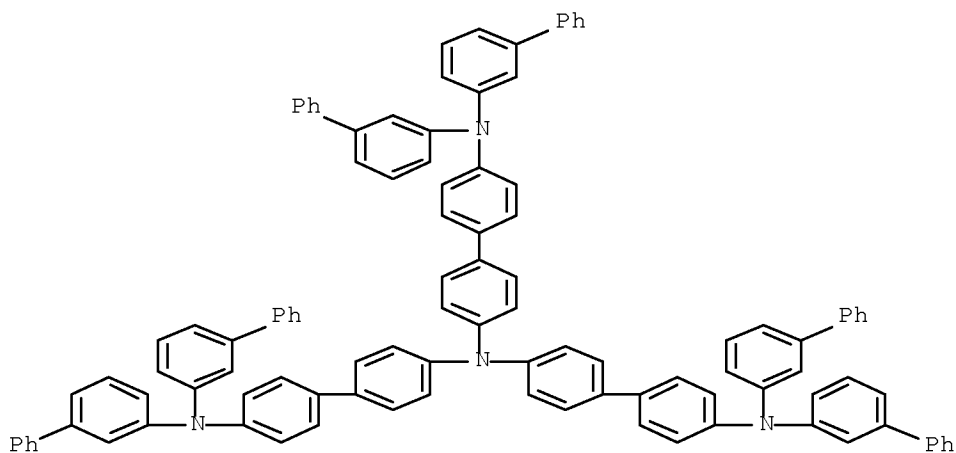
RN 167218-97-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-(2-methylpropyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(2-methylpropyl)phenyl]- (CA INDEX NAME)



RN 167218-98-6 CAPLUS

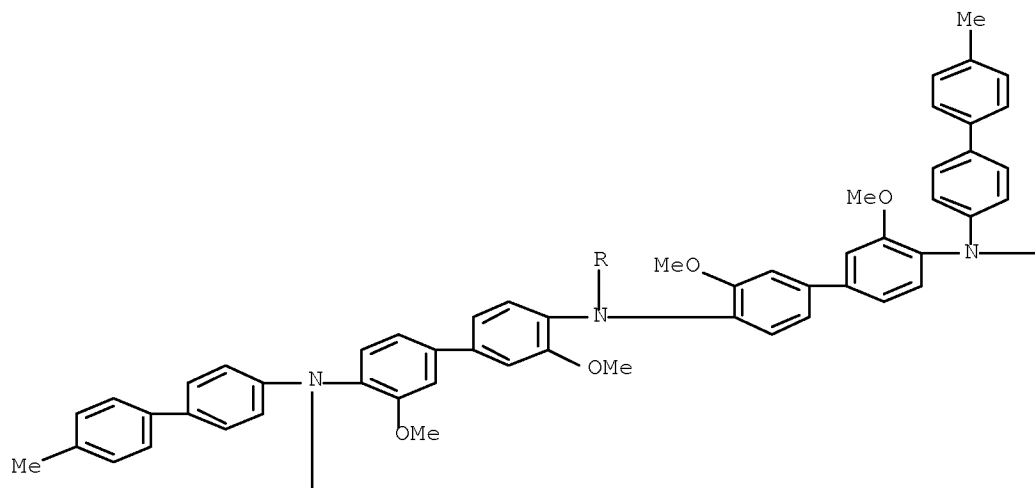
CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis([1,1'-biphenyl]-3-yl)-N',N'-bis[4'-[bis([1,1'-biphenyl]-3-yl)amino][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)



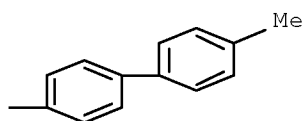
RN 167218-99-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(4'-methyl[1,1'-biphenyl]-4-yl)amino]-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N4',N4'-bis(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

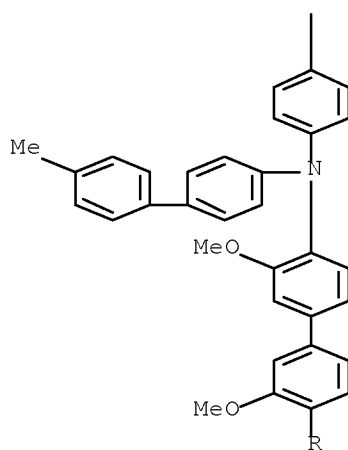
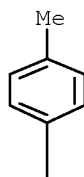
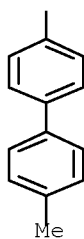
PAGE 1-A



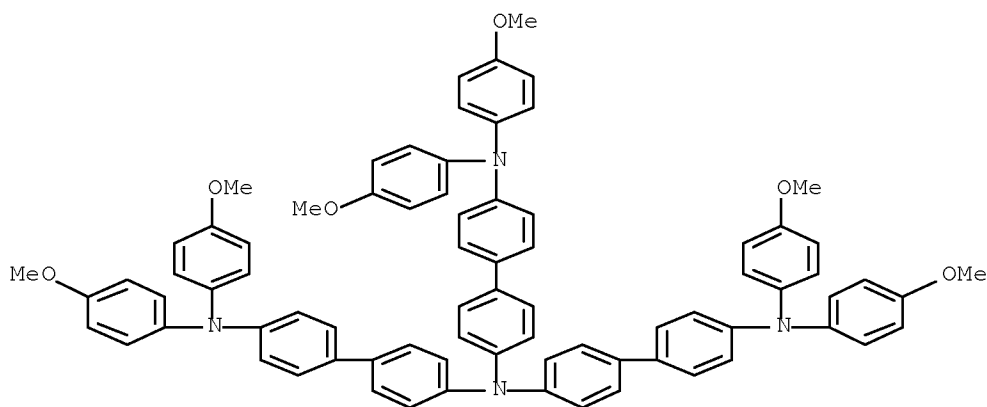
PAGE 1-B





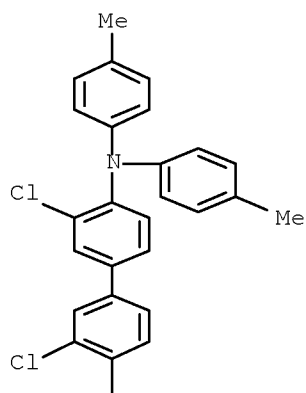


RN 167219-00-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methoxyphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

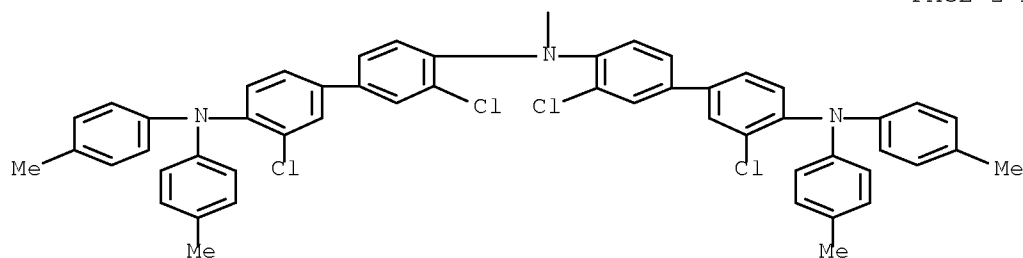


RN 167219-01-4 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-methylphenyl)amino]-3,3'-dichloro[1,1'-biphenyl]-4-yl]-3,3'-dichloro-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)

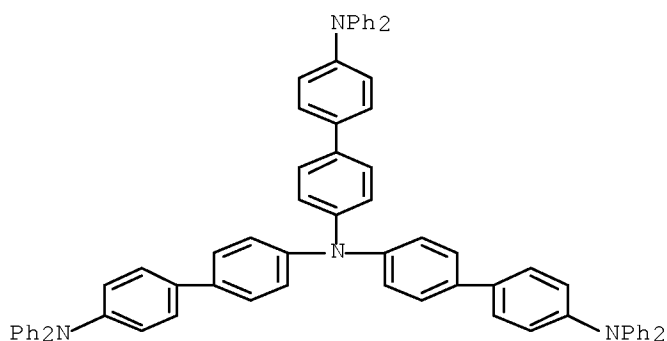
PAGE 1-A



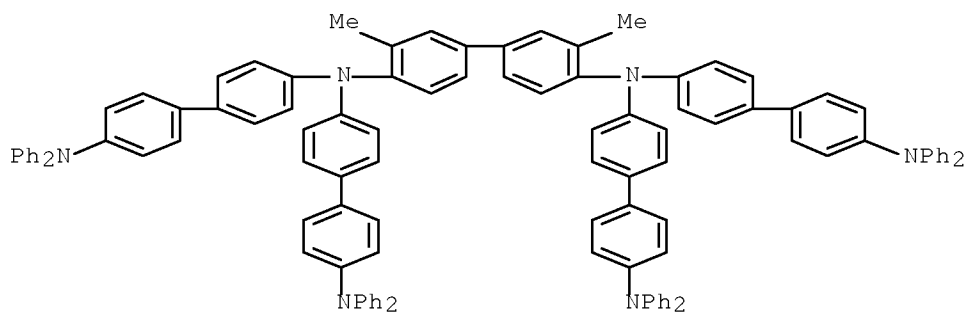
PAGE 2-A



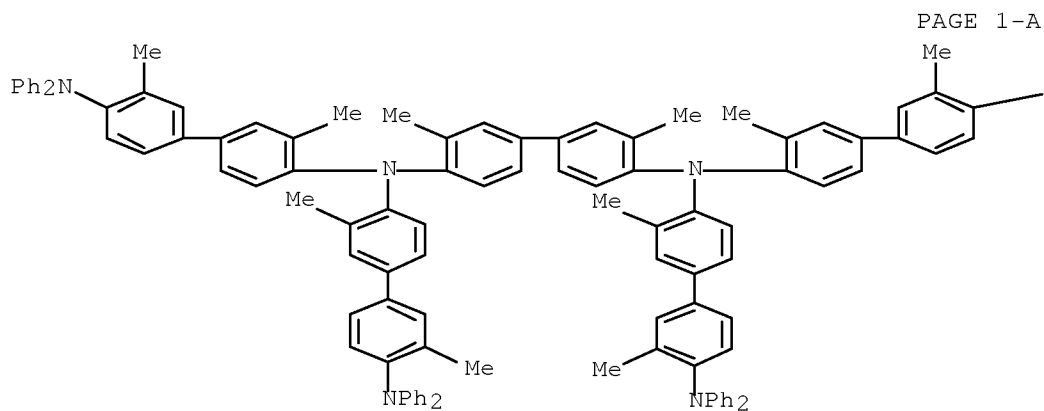
IT 128396-99-6P 167218-41-9P 167218-42-0P  
 167218-52-2P  
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
 (Preparation); USES (Uses)  
 (amine compound as electron-transporting material for electroluminescent  
 devices)  
 RN 128396-99-6 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-  
 4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



RN 167218-41-9 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(  
 diphenylamino)[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



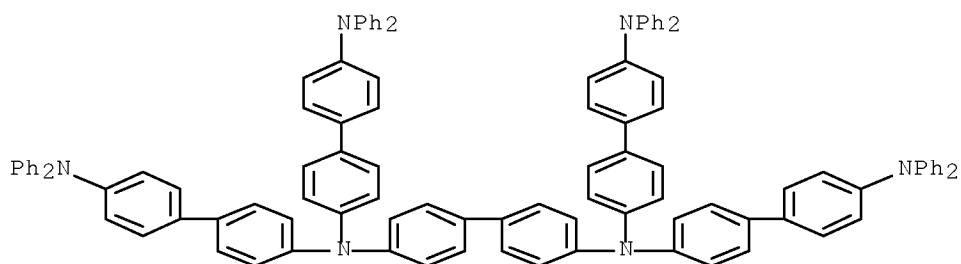
RN 167218-42-0 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)-  
 3,3'-dimethyl[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



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—NPh<sub>2</sub>

RN 167218-52-2 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



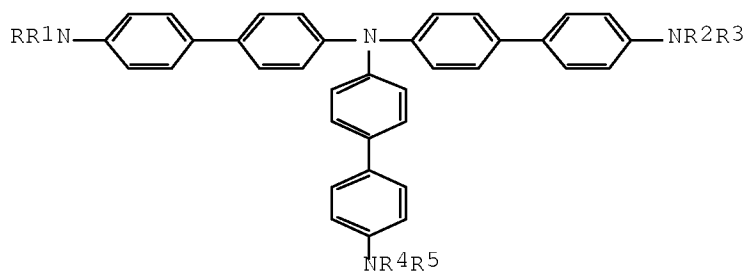
OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

L4 ANSWER 43 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1990:468357 CAPLUS Full-text  
 DOCUMENT NUMBER: 113:68357  
 ORIGINAL REFERENCE NO.: 113:11381a,11384a  
 TITLE: Electrophotographic photoreceptors using amine charge-transporting agent  
 INVENTOR(S): Sakakibara, Teigo; Sakai, Kiyoshi; Sako, Shunkai; Amamiya, Shoji  
 PATENT ASSIGNEE(S): Canon K. K., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent

LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01281453	A	19891113	JP 1988-111250	19880507
JP 04054226	B	19920828		
US 4920022	A	19900424	US 1989-345236	19890501
PRIORITY APPLN. INFO.:			JP 1988-111250	A 19880507
			JP 1988-111255	A 19880507

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): MARPAT 113:68357  
 GI



AB Electrophotog. photoreceptors showing good sensitivity and cyclicability have a layer containing an amine [I; R-R5 = (substituted) alkyl, aralkyl or aryl]. Thus, an Al sheet was coated with a composition containing Lionol Blue NCB Toner ( $\beta$ -type Cu phthalocyanine) and Polyester Adhesive 49,000 (polyester resin) and overcoated with a composition containing I (R, R1 = Me; R2-R5 = Ph) and Panlite K-1300 (polycarbonate resin) to give a photoreceptor.

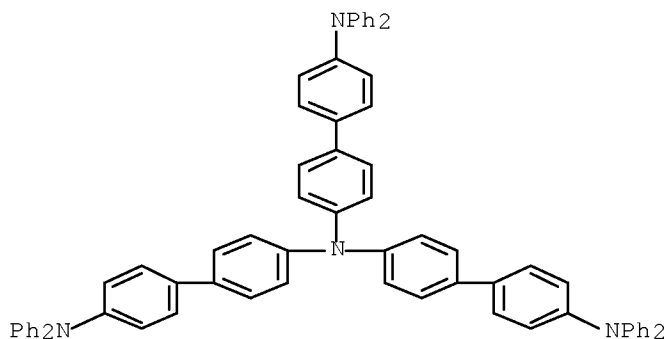
IT 128396-99-6

RL: USES (Uses)

(charge transporting agent, for electrophotog. photoreceptors)

RN 128396-99-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



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L4 ANSWER 32 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1998:398346 CAPLUS Full-text

DOCUMENT NUMBER: 129:87816

ORIGINAL REFERENCE NO.: 129:17967a,17970a

TITLE: Material for organoelectroluminescence device and  
organoelectroluminescence device using the material  
INVENTOR(S): Tamano, Michiko; Onikubo, Toshikazu; Okutsu, Satoshi;  
Enokida, Toshio

PATENT ASSIGNEE(S): Toyo Ink Manufacturing Co., Ltd., Japan

SOURCE: Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 848579	A2	19980617	EP 1997-310157	19971216
EP 848579	A3	19980902		
EP 848579	B1	20030326		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 10233287	A	19980902	JP 1997-301457	19971104
JP 3606025	B2	20050105		
US 5948941	A	19990907	US 1997-990193	19971212
PRIORITY APPLN. INFO.:			JP 1996-335217	A 19961216
			JP 1997-301457	A 19971104

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 129:87816

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Compds. suitable for use in electroluminescent devices are described by such general formula as I (A= Q, Q1, Q2; Ar1-6 = independently selected (un)substituted aryl groups; X1-6 = independently selected O, S, C:O, SO2, Si(B1)B2, N(B1), PB1, P(:O)B1-, -(CH2)x-O-(CH2)y-, (un)substituted alkylene groups, or (un)substituted alicyclic moieties; B1 and B2 = independently selected (un)substituted alkyl group or a (un)substituted aryl group), etc. The materials may be hole-injecting materials. Devices using the materials, including display devices, are also described, as is the use of the materials in the devices.

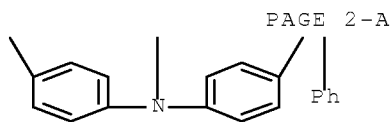
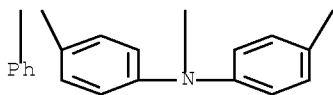
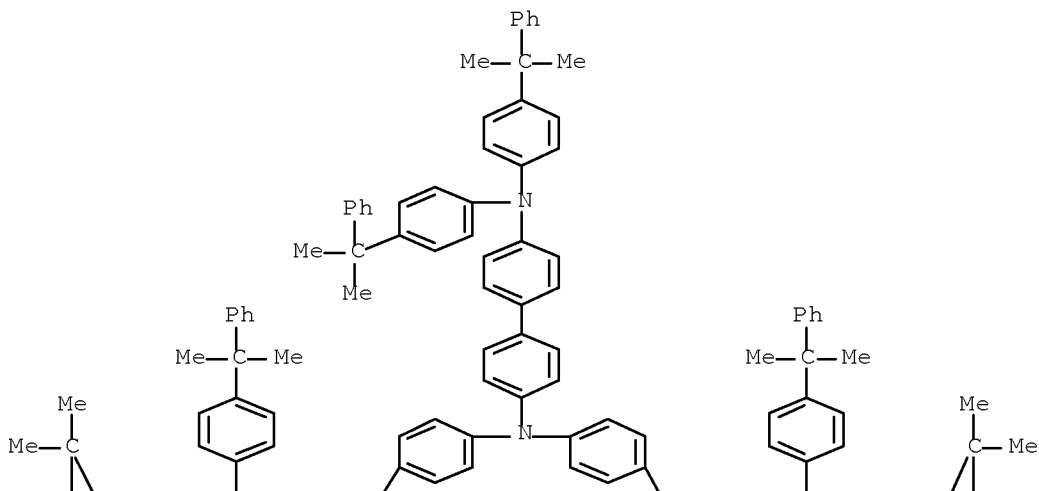
IT 209165-19-5 209165-20-8 209165-21-9

RL: DEV (Device component use); USES (Uses)

(materials for organic electroluminescent devices based on benzene and triphenylamine derivs. and devices using them)

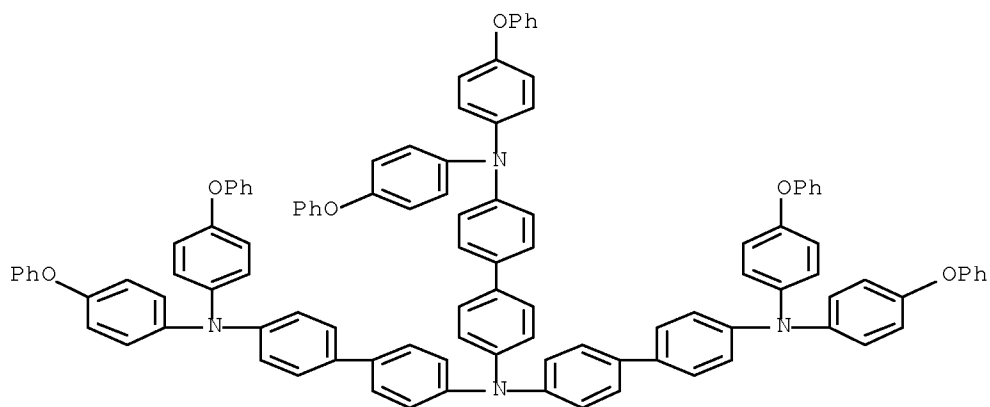
RN 209165-19-5 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-[4'-[bis[4-(1-methyl-1-phenylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N-[4'-[bis[4-(1-methyl-1-phenylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N',N'-bis[4-(1-methyl-1-phenylethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 209165-20-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(4-phenoxyphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-phenoxyphenyl)- (9CI) (CA INDEX NAME)

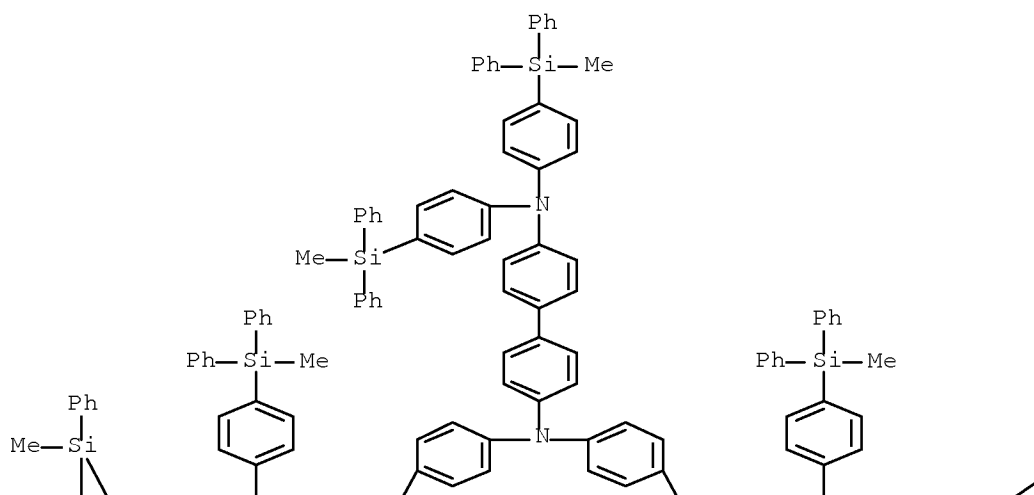


RN 209165-21-9 CAPLUS

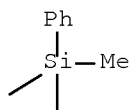
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis[4-

(methyldiphenylsilyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis[4-(methyldiphenylsilyl)phenyl]- (CA INDEX NAME)

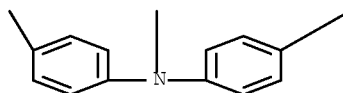
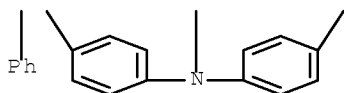
PAGE 1-A



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PAGE 2-A





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OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD  
(6 CITINGS)

L4 ANSWER 33 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1998:389245 CAPLUS Full-text  
 DOCUMENT NUMBER: 129:87837  
 ORIGINAL REFERENCE NO.: 129:17971a,17974a  
 TITLE: Triarylamine derivative hole-transporting agent and  
 its use in electroluminescent device and  
 electrophotographic photoreceptor  
 INVENTOR(S): Tamano, Michiko; Okutsu, Satoshi; Enokida, Toshio  
 PATENT ASSIGNEE(S): Toyo Ink Mfg. Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

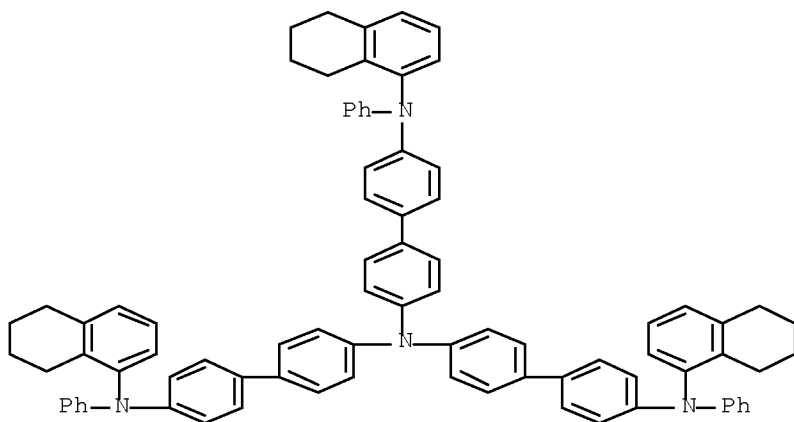
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10158642	A	19980616	JP 1996-321261	19961202
JP 3575198	B2	20041013		
PRIORITY APPLN. INFO.:			JP 1996-321261	19961202
OTHER SOURCE(S):	MARPAT	129:87837		

AB The hole-transporting agent is a triarylamine derivative  
 N(Ar1NR1R2)(Ar2NR3R4)(Ar3NR5R6) [I; R1-6 = (substituted) aryl; Ar1-3 =  
 (substituted) arylene]. The electroluminescent device has a I-containing  
 layer, preferably a hole-injection layer or a light-emitting layer. The  
 electrophotog. photoreceptor contains I and a charge-generating agent. I  
 gives electroluminescent devices with high emission, efficiency, and long  
 service life and electrophotog. photoreceptors with high sensitivity and  
 durability in repeated use.

IT ~~192181-14-9~~  
 RL: DEV (Device component use); TEM (Technical or engineered material  
 use); USES (Uses)  
 (triarylamine derivative hole-transporting agent used in electroluminescent  
 device and electrophotog. photoreceptor)

RN 192181-14-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-phenyl-N',N'-bis[4'-[phenyl(5,6,7,8-  
 tetrahydro-1-naphthalenyl)amino][1,1'-biphenyl]-4-yl]-N-(5,6,7,8-  
 tetrahydro-1-naphthalenyl)- (9CI) (CA INDEX NAME)



L4 ANSWER 34 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1998:282344 CAPLUS Full-text  
 DOCUMENT NUMBER: 129:10595  
 ORIGINAL REFERENCE NO.: 129:2211a,2214a  
 TITLE: Photoconductive imaging member  
 INVENTOR(S): Hu, Nan-xing; Liu, Ping; Ong, Beng S.  
 PATENT ASSIGNEE(S): Xerox Corp., USA  
 SOURCE: U.S., 17 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5747205	A	19980505	US 1997-807487	19970227
JP 10312073	A	19981124	JP 1998-47123	19980227
JP 4111406	B2	20080702		
JP 2008031167	A	20080214	JP 2007-188152	20070719
PRIORITY APPLN. INFO.:			US 1997-807487	A 19970227
			US 1997-807510	A 19970227
			JP 1998-47123	A3 19980227

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): MARPAT 129:10595  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A photoconductive imaging member comprises a starburst aromatic amine compound of the formula N(A1Ra)(A2Rb)A3Rc wherein A1-3 independently represent biaryl; Ra, Rb, and Rc independently represent one of the groups of the formulas NArlAr2, I, and II wherein Ar1 and Ar2 independently represent aryl; R1-8 independently represent hydrogen, halogens, hydrocarbon groups, and alkoxy; and X represents oxygen, sulfur, or alkylene.

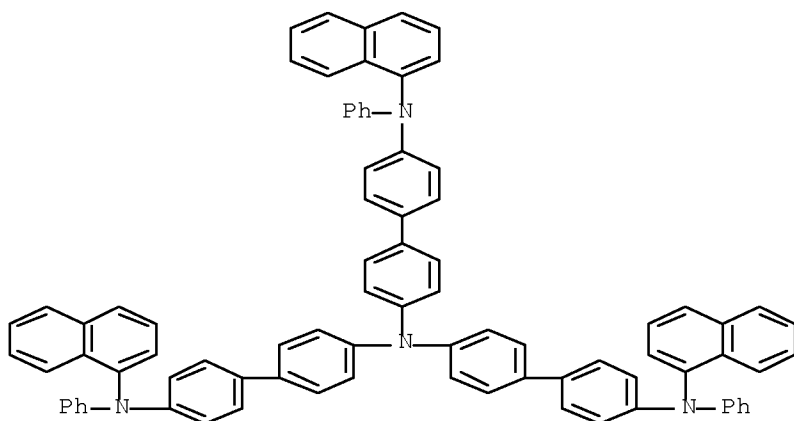
IT 207447-37-8 207447-41-4 207447-43-6  
 207447-44-7

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(electrophotog. photoreceptors containing)

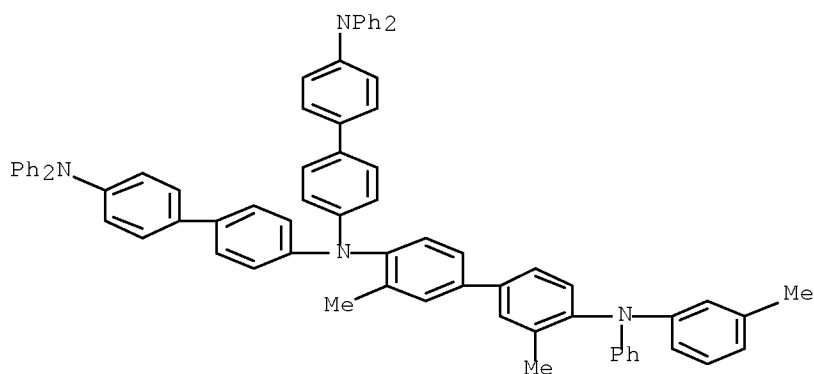
RN 207447-37-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4-1-naphthalenyl-N4',N4'-bis[4'-(1-naphthalenylphenylamino)[1,1'-biphenyl]-4-yl]-N4-phenyl- (CA INDEX NAME)



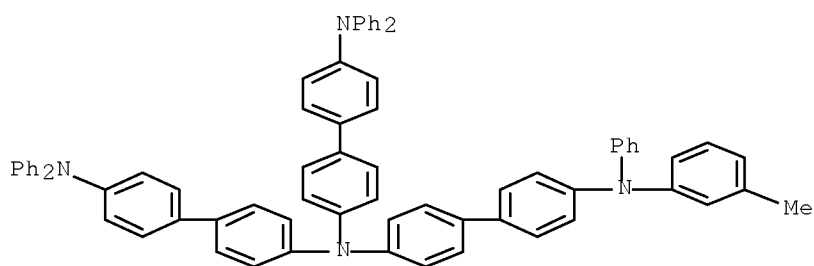
RN 207447-41-4 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-3,3'-dimethyl-N4'-(3-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



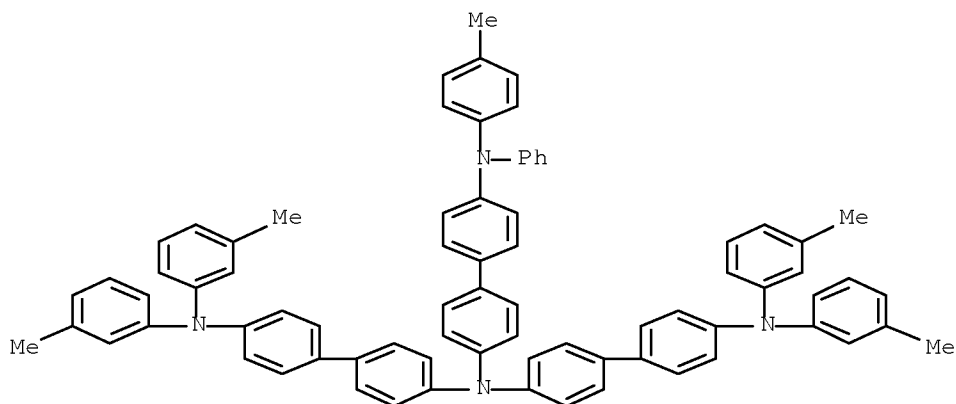
RN 207447-43-6 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4'-(3-methylphenyl)-N4'-phenyl- (CA INDEX NAME)



RN 207447-44-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis[4'-[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N'-(4-methylphenyl)-N'-phenyl- (9CI) (CA INDEX NAME)

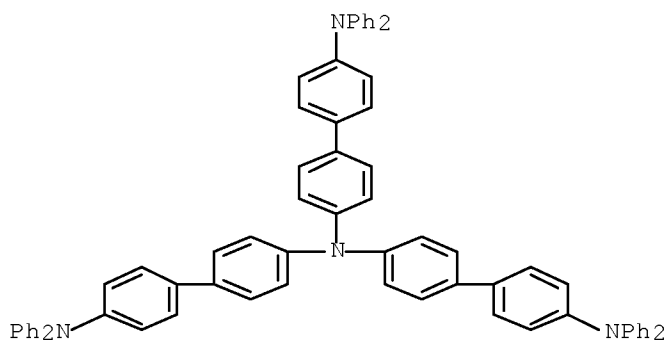


IT 128396-99-6P 207447-28-7P 207447-31-2P

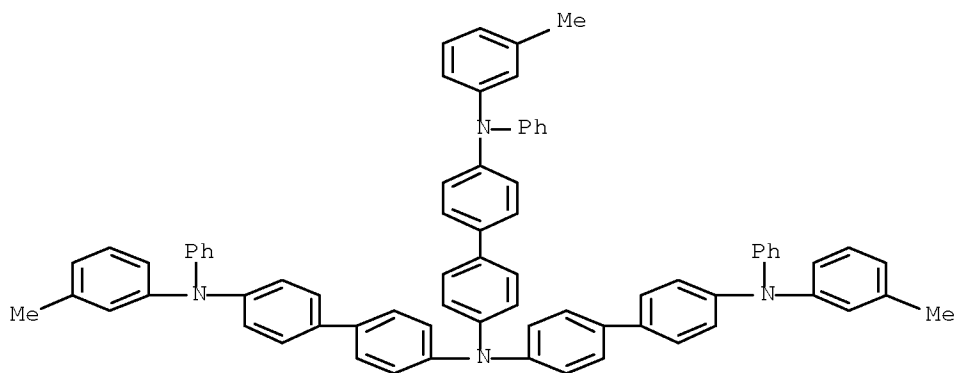
RL: DEV (Device component use); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation and use in electrophotog. photoreceptors)

RN 128396-99-6 CAPLUS

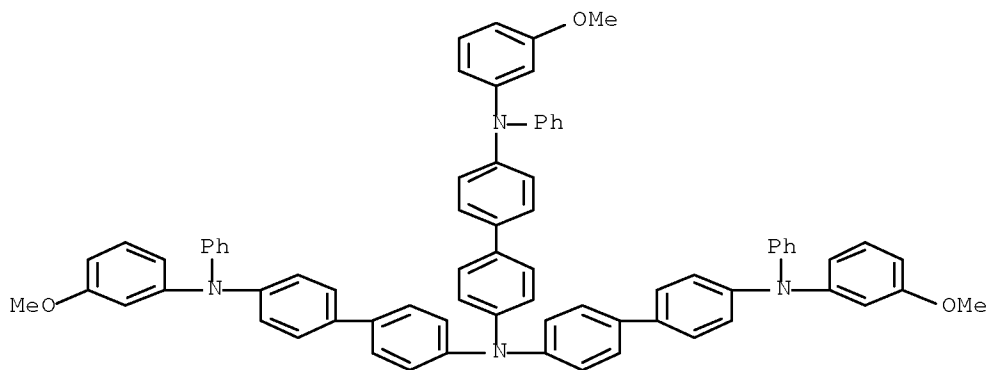
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



RN 207447-28-7 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N-(3-methylphenyl)-N',N'-bis[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-phenyl- (9CI) (CA INDEX NAME)



RN 207447-31-2 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N-(3-methoxyphenyl)-N',N'-bis[4'-[(3-methoxyphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-phenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 35 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1997:760094 CAPLUS Full-text  
 DOCUMENT NUMBER: 128:41004  
 ORIGINAL REFERENCE NO.: 128:7927a,7930a  
 TITLE: Thermal stability of organic electroluminescent devices fabricated using novel charge transporting materials  
 AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada,

CORPORATE SOURCE: Akane; Taga, Yasunori  
Toyota Central Research Development Laboratories,  
Inc., Aichi, 480, Japan  
SOURCE: Macromolecular Symposia (1997), Volume Date 1998,  
125(Organic Light-Emitting Materials and Devices),  
181-188  
CODEN: MSYMEC; ISSN: 1022-1360  
PUBLISHER: Huethig & Wepf Verlag  
DOCUMENT TYPE: Journal  
LANGUAGE: English

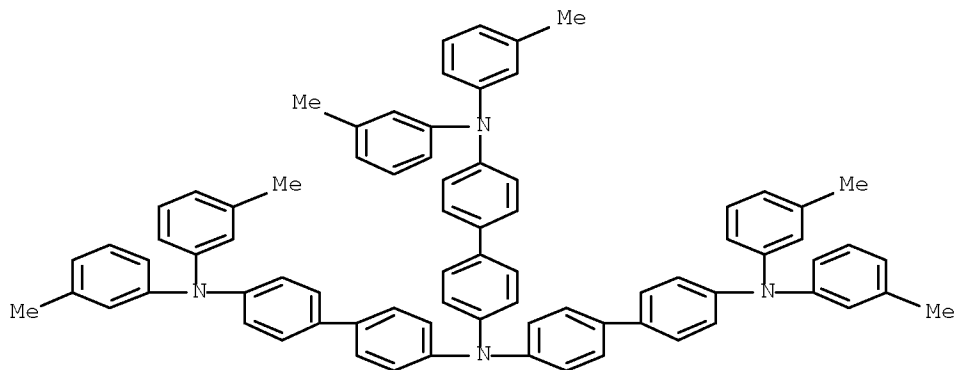
AB Novel hole and electron transporting materials were synthesized to improve the thermal stability of organic electroluminescent (EL) devices. Mol. structures of such hole and electron transporting materials were designed based on triphenylamine (TPA) and oxadiazole (OXD) moieties, resp. The resulting materials have high glass transition temps. (Tg) over 100° and the vacuum-deposited thin films are significantly thermally stable. For the 2-layer EL devices using the novel hole transporting materials and the typical emitting material, tris(8-quinolinolato) Al, the thermal stability was clearly seen to depend on the Tg of the hole transporting material; excellent thermal stability was achieved. For the 3-layer EL device using the novel electron transporting material, good emission efficiency and good stability were achieved. The electron transporting materials were also applied to the polymeric system with polyvinylcarbazole matrix.

IT 189196-95-0

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)  
(glass transition temperature and electroluminescent efficiency of hole transport material)

RN 189196-95-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4',N4'-bis(3-methylphenyl)- (CA INDEX NAME)



L4 ANSWER 36 OF 43 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:670115 CAPLUS Full-text

DOCUMENT NUMBER: 127:352802

ORIGINAL REFERENCE NO.: 127:69047a,69050a

TITLE: Organic electroluminescent elements and manufacture thereof

INVENTOR(S): Fukuyama, Masao; Suzuki, Mutsumi; Murakami, Mutsuaki

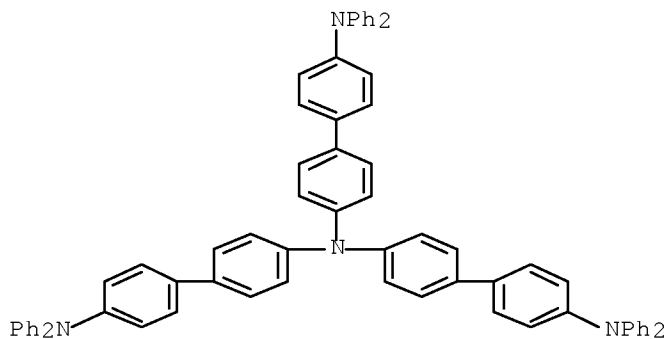
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09266070	A	19971007	JP 1996-73524	19960328
JP 3473258	B2	20031202		

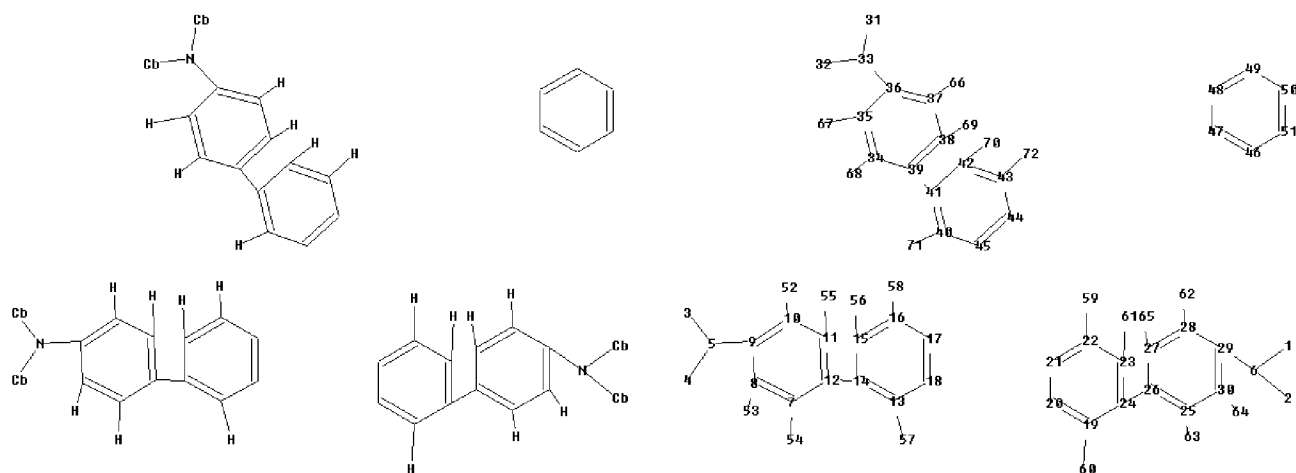
PRIORITY APPLN. INFO.: JP 1996-73524 19960328  
 AB The elements comprise: a glass substrate; an ITO electrode stripe array .dblvert. X; an hole-transporting amine derivative layer (glass transition temperature T = Tg) heat treated at T > Tg; a tris(8-quinolinolato)aluminum phosphor layer; and an Al/Li electrode stripe array .dblvert. Y.  
 IT 128396-99-6  
 RL: DEV (Device component use); USES (Uses)  
 (manufacture of organic electroluminescent elements containing hoe-transporting amine derivs.)  
 RN 128396-99-6 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)



<http://www.cas.org/support/stngen/stndoc/properties.html>

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Uploading C:\Program Files\STNEXP\Queries\10594239#1.str



chain nodes :

1 2 3 4 5 6 31 32 33 52 53 54 55 56 57 58 59 60 61 62 63 64  
65 66 67 68 69 70 71 72

ring nodes :

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27  
28 29 30 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51

chain bonds :

1-6 2-6 3-5 4-5 5-9 6-29 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58  
19-60 22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 33-36 34-68  
35-67 37-66  
38-69 39-41 40-71 42-70 43-72

ring bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

exact/norm bonds :

5-9 6-29 33-36

exact bonds :

1-6 2-6 3-5 4-5 7-54 8-53 10-52 11-55 12-14 13-57 15-56 16-58 19-60  
22-59 23-61 24-26 25-63 27-65 28-62 30-64 31-33 32-33 34-68 35-67 37-66  
38-69 39-41 40-71  
42-70 43-72

normalized bonds :

7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18 14-15 15-16 16-17 17-18 19-20  
19-24 20-21 21-22 22-23 23-24 25-26 25-30 26-27 27-28 28-29 29-30 34-35  
34-39 35-36  
36-37 37-38 38-39 40-41 40-45 41-42 42-43 43-44 44-45 46-47 46-51 47-48  
48-49 49-50  
50-51

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:CLASS 6:CLASS 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom  
22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom  
31:Atom 32:Atom  
33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom  
42:Atom 43:Atom



44:Atom 45:Atom 46:Atom 47:Atom 48:Atom 49:Atom 50:Atom 51:Atom 52:CLASS  
 53:CLASS 54:CLASS  
 55:CLASS 56:CLASS 57:CLASS 58:CLASS 59:CLASS 60:CLASS 61:CLASS 62:CLASS  
 63:CLASS 64:CLASS  
 65:CLASS 66:CLASS 67:CLASS 68:CLASS 69:CLASS 70:CLASS 71:CLASS 72:CLASS  
 Generic attributes :  
 1:  
 Saturation : Unsaturated  
 2:  
 Saturation : Unsaturated  
 3:  
 Saturation : Unsaturated  
 4:  
 Saturation : Unsaturated  
 31:  
 Saturation : Unsaturated  
 32:  
 Saturation : Unsaturated

L5 STRUCTURE UPLOADED

=> d 15

L5 HAS NO ANSWERS

L5 STR

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

Structure attributes must be viewed using STN Express query preparation.

=> s 15

SAMPLE SEARCH INITIATED 11:02:12 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 1350 TO ITERATE

100.0% PROCESSED 1350 ITERATIONS

9 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 24796 TO 29204

PROJECTED ANSWERS: 9 TO 360

L6 9 SEA SSS SAM L5

=> s 15 full

FULL SEARCH INITIATED 11:02:21 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 27357 TO ITERATE

100.0% PROCESSED 27357 ITERATIONS

203 ANSWERS

SEARCH TIME: 00.00.01

L7 203 SEA SSS FUL L5

=> s 17

L8 130 L7

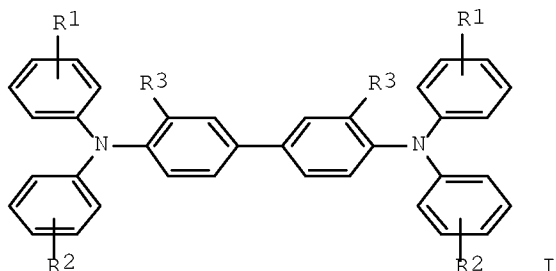
=> s 18 and electrolumin?  
 108605 ELECTROLUMIN?  
 L9 84 L8 AND ELECTROLUMIN?

=> d ibib abs hitstr 80-84

L9 ANSWER 80 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1996:740336 CAPLUS Full-text  
 DOCUMENT NUMBER: 126:39393  
 ORIGINAL REFERENCE NO.: 126:7708h,7709a  
 TITLE: Electroluminescent device  
 INVENTOR(S): Fukuyama, Masao; Suzuki, Mutsumi; Murakami, Mutsuaki  
 PATENT ASSIGNEE(S): Matsushita Electric Ind Co Ltd, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08259934	A	19961008	JP 1995-60749	19950320
JP 3449020	B2	20030922		
PRIORITY APPLN. INFO.:			JP 1995-60749	19950320
OTHER SOURCE(S):	MARPAT	126:39393		

GI



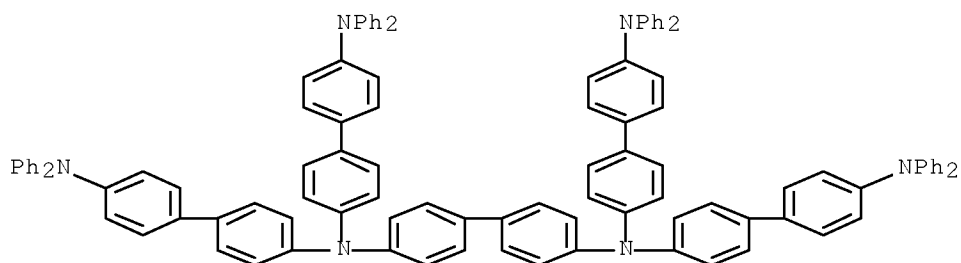
AB An electroluminescent device, suited for use in display devices, comprises a light-emitting layer placed next to a mixed layer which is composed of amine compds. and the light-emitting material used in the light-emitting layer, wherein the amine compound is represented by I (R1, R2 = H, Ph, lower mol. weight alkyl or alkoxy group substituted Ph, lower mol. weight alkyl and alkoxy groups; R3 = H, Me, methoxy, and Cl; one of R1 and R2 is iso-Bu, sec-Bu, tert-Bu, Ph, lower mol. weight alkyl substituted Ph, or lower mol. weight alkoxy substituted phenyl).

IT 167218-52-2 167218-53-3 167218-75-9  
 184033-66-7 184033-67-8 184033-68-9

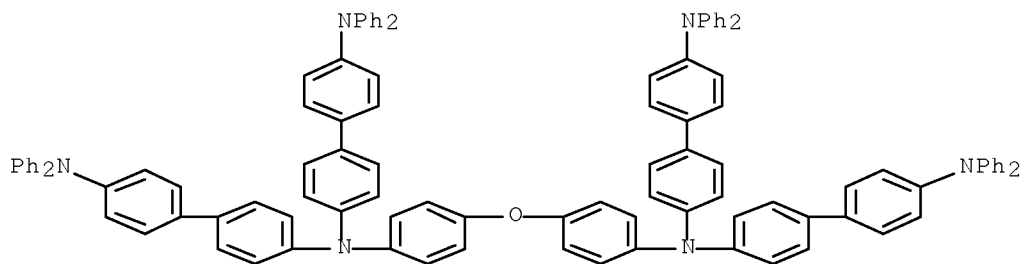
RL: DEV (Device component use); USES (Uses)  
 (hole transport material for electroluminescent device)

RN 167218-52-2 CAPLUS

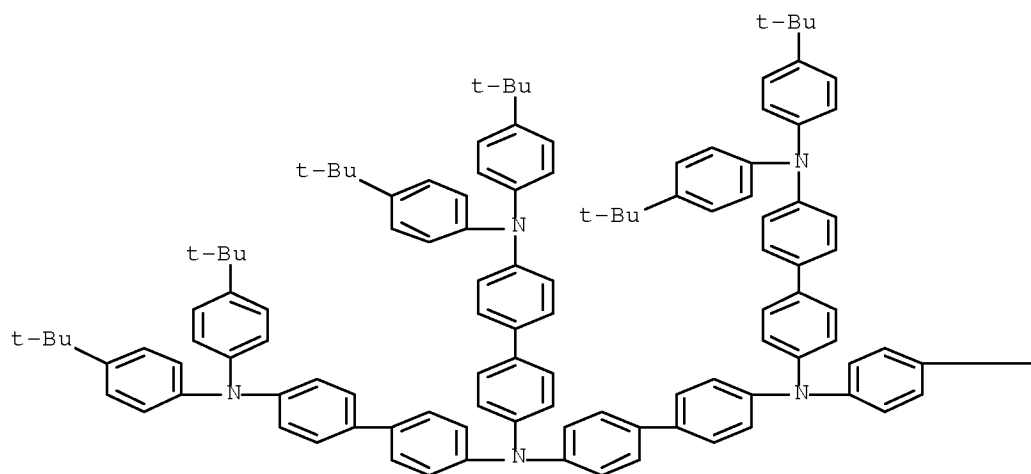
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

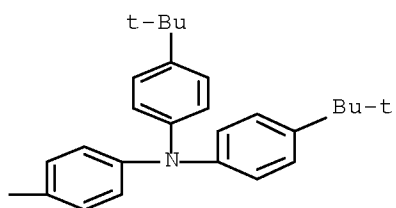


RN 167218-53-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(oxydi-4,1-phenylene)bis[N-(4'-  
 (diphenylamino)[1,1'-biphenyl]-4-yl)-N',N'-diphenyl- (9CI) (CA INDEX  
 NAME)

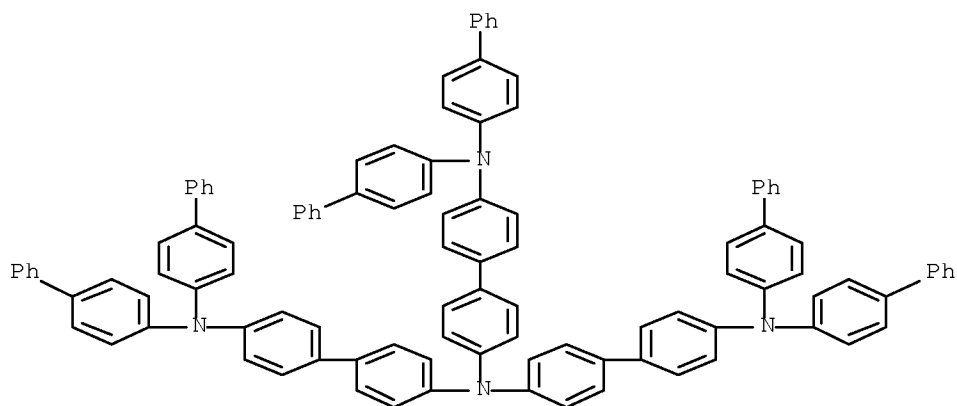


RN 167218-75-9 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-[bis[4-(1,1-  
 dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

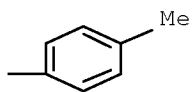
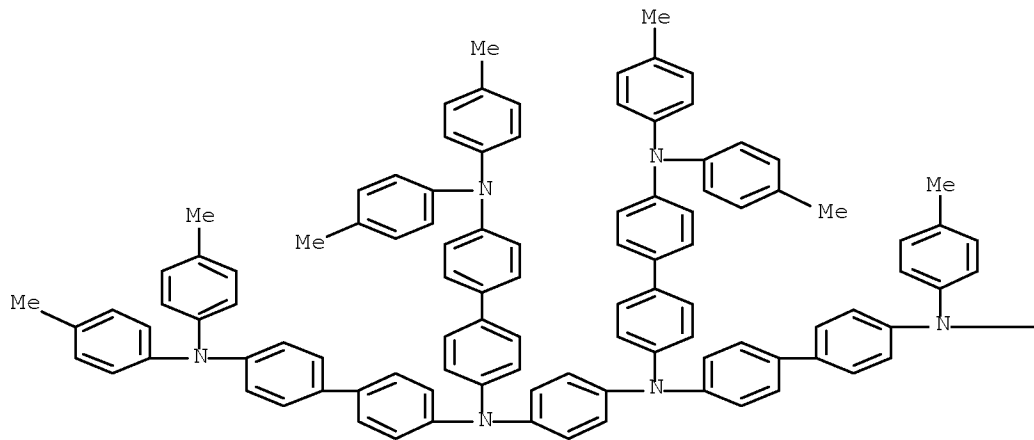




RN 184033-66-7 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis([1,1'-biphenyl]-4-yl)-N4',N4'-bis[4'-[bis([1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

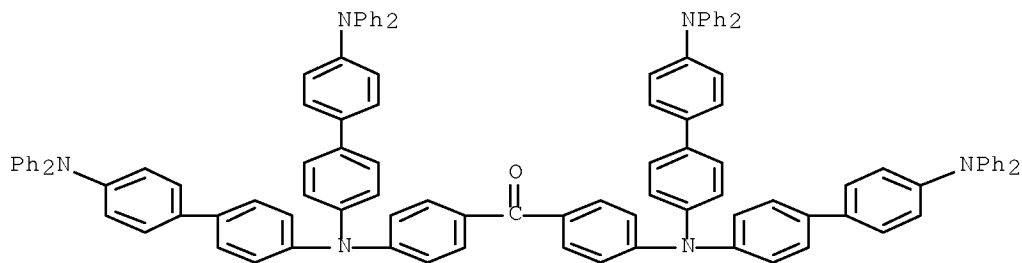


RN 184033-67-8 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,4-phenylenebis[N-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 184033-68-9 CAPLUS

CN Methanone, bis[4-[bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]amino]phenyl]-  
(CA INDEX NAME)



OS.CITING REF COUNT:

2

THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD  
(2 CITINGS)

L9 ANSWER 81 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:273378 CAPLUS Full-text

DOCUMENT NUMBER: 124:302069

ORIGINAL REFERENCE NO.: 124:55735a,55738a

TITLE: Organic electroluminescent device

INVENTOR(S): Shirota, Yasuhiko; Nakatani, Kenji; Inoe, Tetsuji;  
Nanba, Noryoshi

PATENT ASSIGNEE(S): TDK Electronics Co., Ltd., Japan; TDK Corp.

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

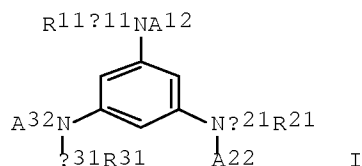
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	-----
JP 08048974	A	19960220	JP 1994-207970	19940809
JP 3471910	B2	20031202		
PRIORITY APPLN. INFO.:			JP 1994-207970	19940809
OTHER SOURCE(S):	MARPAT	124:302069		

GI



AB The organic electroluminescent device comprises a layer containing electron injection/transport compound and trisarylaminobenzene represented by I [ $\Phi$ 11,  $\Phi$ 21, and  $\Phi$ 31 = divalent aromatic residue; R11, R21, and R31 = N $\Phi$ 01 $\Phi$ 02, NH $\Phi$ 01, NR01 $\Phi$ 01,  $\Phi$ 01, O $\Phi$ 01 or S $\Phi$ 01;  $\Phi$ 01,  $\Phi$ 02 = monovalent aromatic residue; R01 = alkyl; one of R01, R02, and R03 = N $\Phi$ 01 $\Phi$ 02, NH $\Phi$ 01, or NR01 $\Phi$ 01; A12, A22, and A32 = monovalent aromatic residue, alkyl, or H].

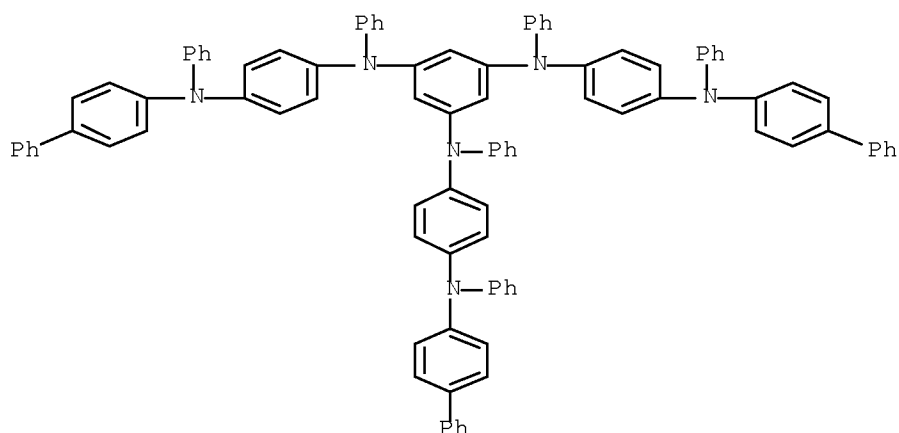
IT 162879-23-4

RL: DEV (Device component use); USES (Uses)

(organic electroluminescent device having layer containing trisarylaminobenzene derivative)

RN 162879-23-4 CAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-([1,1'-biphenyl]-4-ylphenylamino)phenyl]-N1,N3,N5-triphenyl- (CA INDEX NAME)



L9 ANSWER 82 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1996:101045 CAPLUS Full-text  
 DOCUMENT NUMBER: 124:188998  
 ORIGINAL REFERENCE NO.: 124:34719a,34722a  
 TITLE: Organic ~~electroluminescent~~ material and  
 luminescent device therefrom  
 INVENTOR(S): Tamano, Michiko; Onikubo, Shunichi; Enokida, Toshio  
 PATENT ASSIGNEE(S): Toyo Ink Mfg Co, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 07316549	A	19951205	JP 1994-106715	19940520
PRIORITY APPLN. INFO.:			JP 1994-106715	19940520
OTHER SOURCE(S):	MARPAT	124:188998		

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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

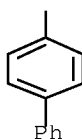
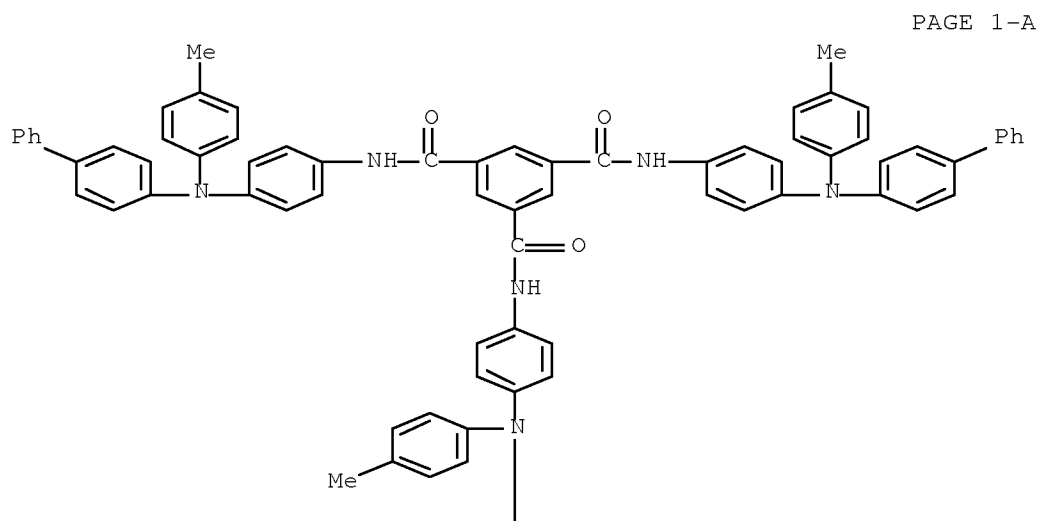
AB The material represented by I [R1-12 = H, halo, alkyl, cyano, NO<sub>2</sub>, ester, NH<sub>2</sub>, monosubstituted or disubstituted amino, acylamino, OH, alkoxy, SH, alkyloxy, alkylthio, aryloxy, arylthio, siloxy, acyl, cycloalkyl, carbamoyl, CO<sub>2</sub>H, SO<sub>3</sub>H, imide, (un)substituted aliphatic group, (un)substituted alicyclic group, (un)substituted carbocyclic aromatic group, (un)substituted heterocyclic aromatic group, (un)substituted heterocyclic group; adjacent R1-12 may form (un)substituted alicyclic group, (un)substituted carbocyclic aromatic group, (un)substituted heterocyclic aromatic group, (un)substituted heterocyclic group]. The device has ≥1 layer containing the material or a hole-injection layer containing the material.

IT 174084-82-3

RL: DEV (Device component use); USES (Uses)

(~~electroluminescent~~ device containing triphenylamine derivative of

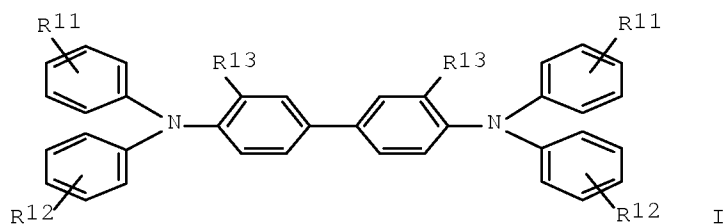
trimesic acid with high luminance and luminescent efficiency)  
RN 174084-82-3 CAPLUS  
CN 1,3,5-Benzenetricarboxamide, N1,N3,N5-tris[4-[[1,1'-biphenyl]-4-yl(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)



L9 ANSWER 83 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 1995:769803 CAPLUS Full-text  
DOCUMENT NUMBER: 123:183664  
ORIGINAL REFERENCE NO.: 123:32405a,32408a  
TITLE: Amine compound and electro-luminescence device comprising same.  
INVENTOR(S): Tomiyama, Hiromitsu; Oshino, Masahiko; Nakanishi, Naoko; Suzuki, Mutsumi; Fukuyama, Masao; Murakami, Mutsuaki; Nambu, Taro  
PATENT ASSIGNEE(S): Hodogaya Chemical Co., Ltd., Japan; Matsushita Electric Industrial Co., Ltd.  
SOURCE: Eur. Pat. Appl., 98 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 650955	A1	19950503	EP 1994-117206	19941031
EP 650955	B1	19980819		
R: DE, FR, GB				
JP 07126615	A	19950516	JP 1993-273883	19931101
JP 3194657	B2	20010730		
JP 07126225	A	19950516	JP 1993-293800	19931101
JP 3574860	B2	20041006		
JP 07126226	A	19950516	JP 1993-293801	19931101
JP 3220950	B2	20011022		
JP 2001273978	A	20011005	JP 2001-49489	19931101
JP 3529735	B2	20040524		
JP 07331238	A	19951219	JP 1994-132744	19940615
JP 08003122	A	19960109	JP 1994-155470	19940615
JP 08100172	A	19960416	JP 1994-236622	19940930
JP 3274939	B2	20020415		
JP 2001181240	A	20010703	JP 2000-332663	20001031
JP 3567323	B2	20040922		
JP 2002343577	A	20021129	JP 2002-83871	20020325
JP 3745296	B2	20060215		
JP 2004182740	A	20040702	JP 2004-21884	20040129
JP 3880967	B2	20070214		
PRIORITY APPLN. INFO.:			JP 1993-273883	A 19931101
			JP 1993-293800	A 19931101
			JP 1993-293801	A 19931101
			JP 1994-132744	A 19940615
			JP 1994-155470	A 19940615
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			JP 2001-49489	A3 19931101
OTHER SOURCE(S):		MARPAT 123:183664		
GI				

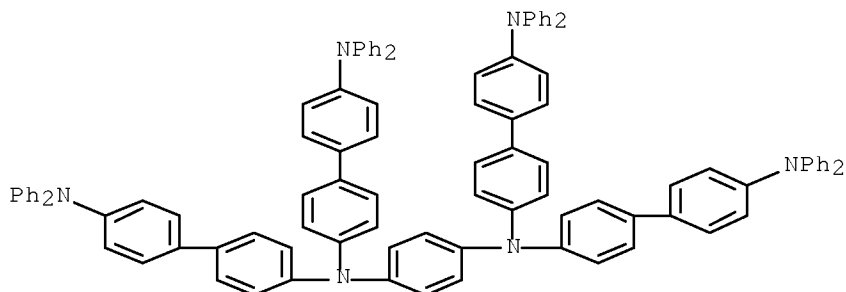


- AB Novel amine compds. useful as electron-transporting materials to be incorporated in organic electro-luminescence (EL) devices are described, e.g., having the formula I [R1, R2 = H, alkyl, alkoxy, Ph, alkylphenyl, alkoxyphenyl, with the proviso that  $\geq 1$  of R1 and R2 is n-Bu, i-Bu, sec-Bu, tert-Bu, Ph, alkoxyphenyl, alkylphenyl; R3 = H, alkyl, alkoxy, Cl]. Five more Markush structures are given. The organic EL device can find wide application in various display units, requires a low applied voltage and exhibits a high luminance and an excellent stability.
- IT 167218-73-7 167218-75-9 167218-76-0  
167218-77-1 167218-78-2 167218-79-3

(amine compound as electron-transporting material for electroluminescent devices)

RN 167218-73-7 CAPLUS

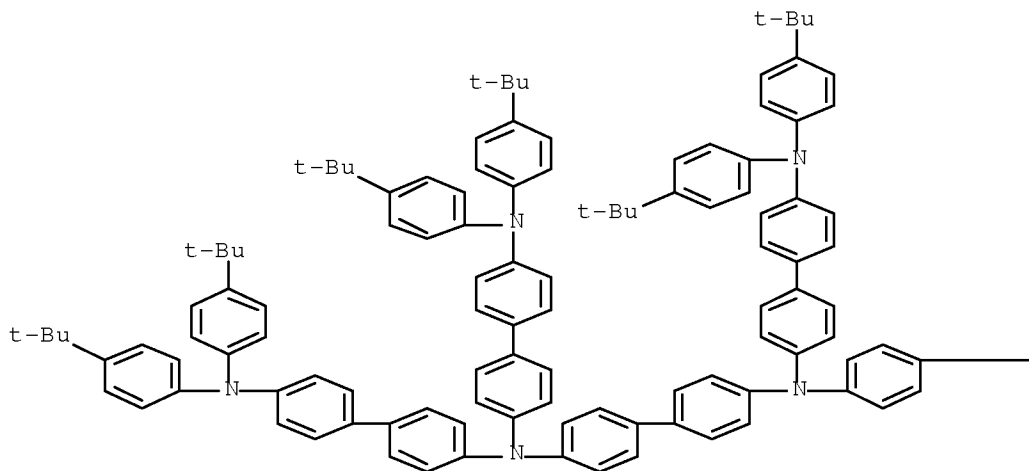
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,4-phenylenebis[N-(4'-(diphenylamino)[1,1'-biphenyl]-4-yl)-N',N'-diphenyl- (9CI) (CA INDEX NAME)

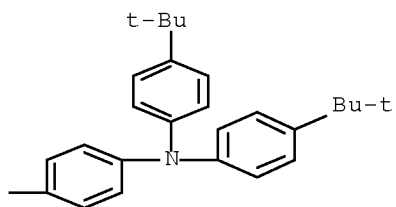


RN 167218-75-9 CAPLUS

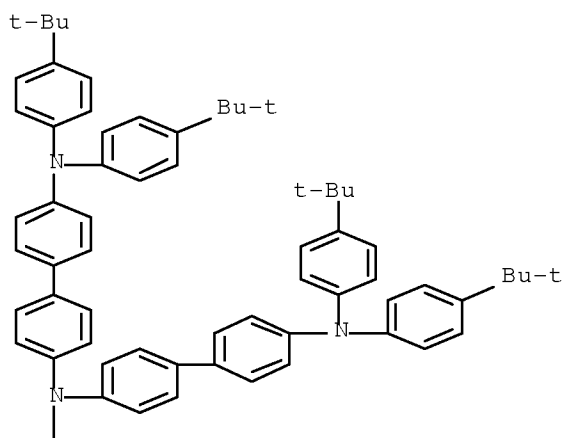
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

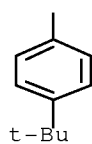
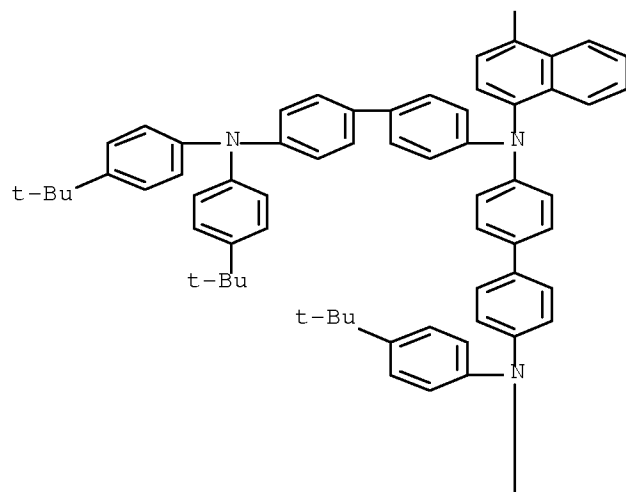
PAGE 1-A



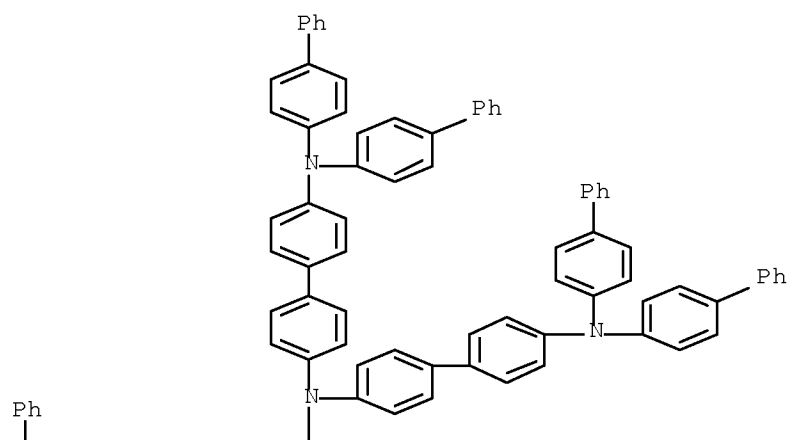


RN 167218-76-0 CAPLUS  
 CN 1,4-Naphthalenediamine, N1,N1,N4,N4-tetrakis[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)

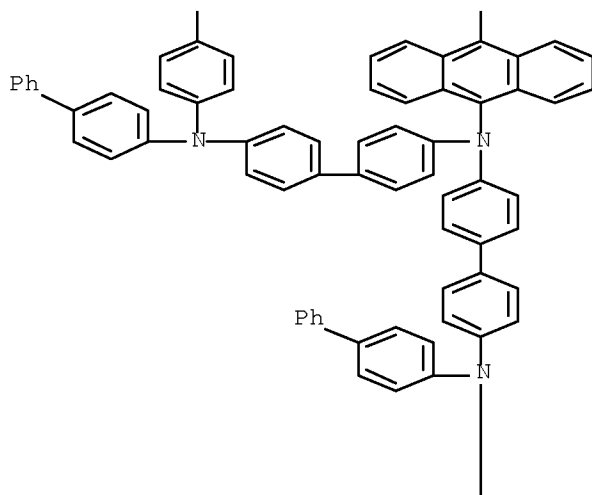




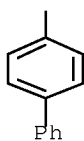
RN 167218-77-1 CAPLUS  
 CN 9,10-Anthracenediamine, N9,N9,N10,N10-tetrakis[4'-[bis([1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



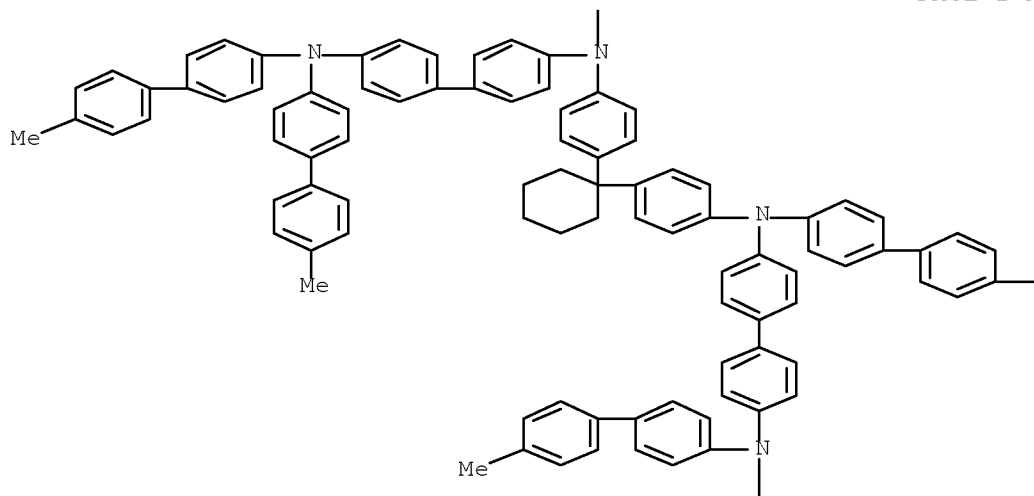
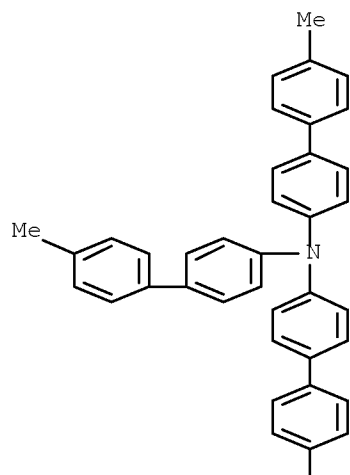
PAGE 2-A



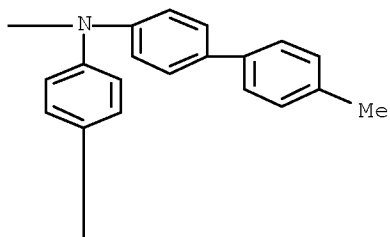
PAGE 3-A



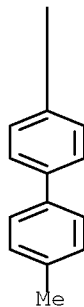
RN 167218-78-2 CAPLUS  
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(cyclohexylidenedi-4,1-phenylene)bis[N-  
[4'-[bis(4'-methyl[1,1'-biphenyl]-4-yl)amino][1,1'-biphenyl]-4-yl]-N',N'-  
bis(4'-methyl[1,1'-biphenyl]-4-yl)- (9CI) (CA INDEX NAME)



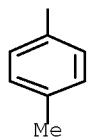
PAGE 2-B



PAGE 3-A

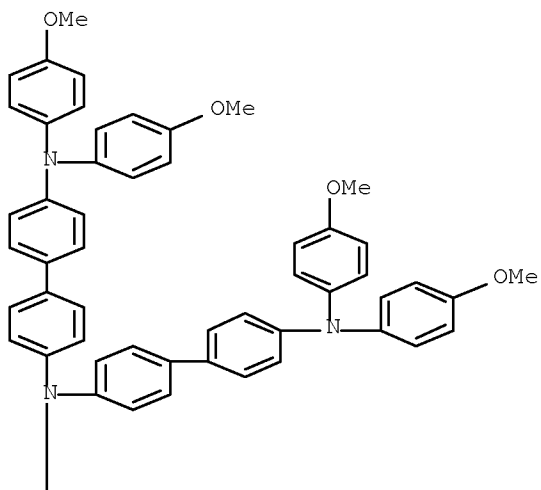


PAGE 3-B

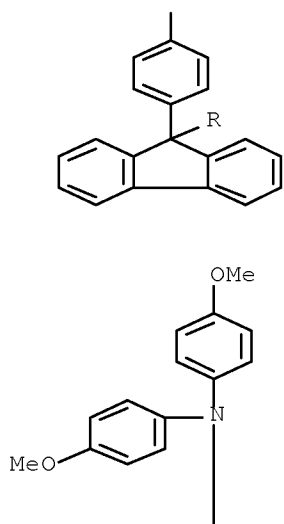


RN 167218-79-3 CAPLUS  
CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-(9H-fluoren-9-ylidenedi-4,1-phenylene)bis[N-[4'-[bis(4-methoxyphenyl)amino]-[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

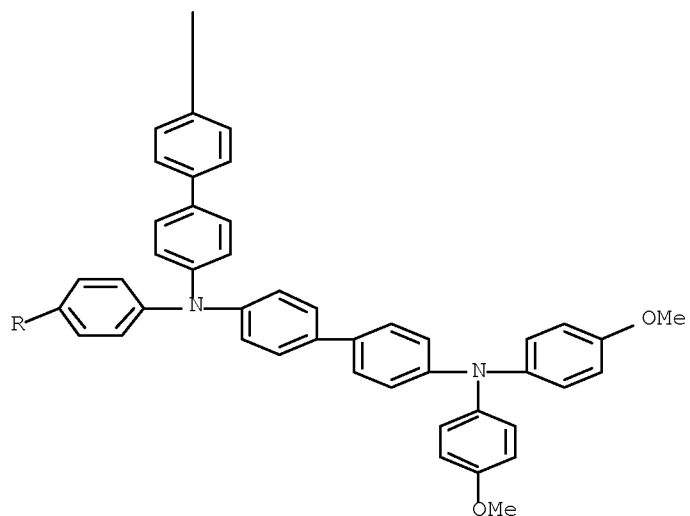
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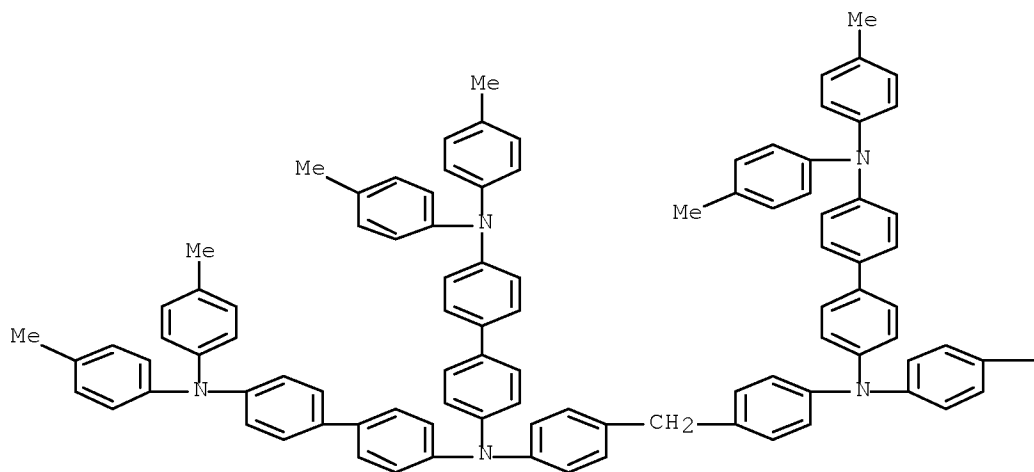


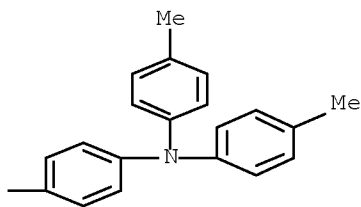




RN 167218-81-7 CAPLUS

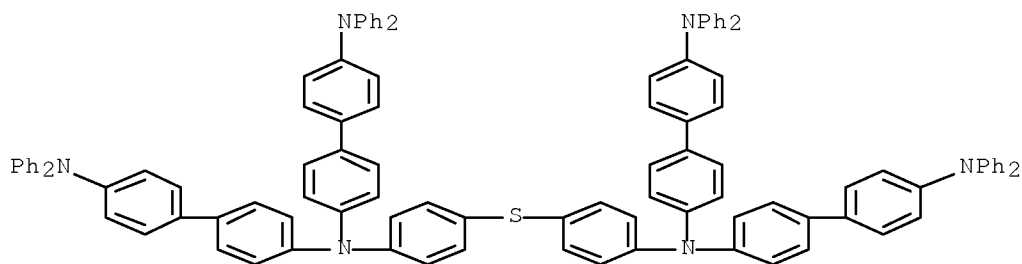
CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(methylenedi-4,1-phenylene)bis[N-[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)-(9CI) (CA INDEX NAME)





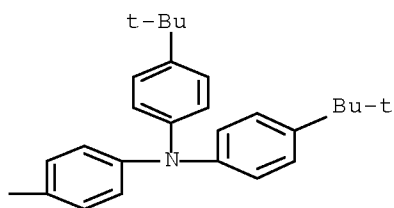
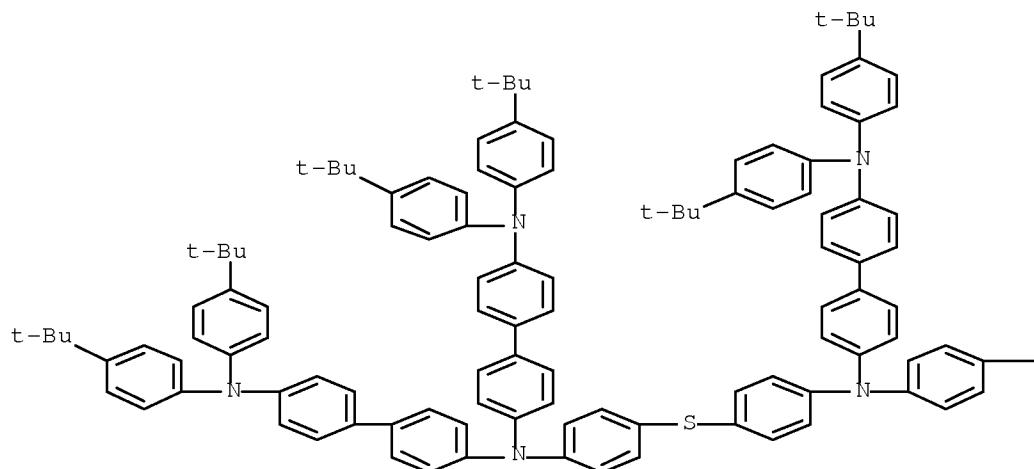
RN 167218-82-8 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(thiodi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

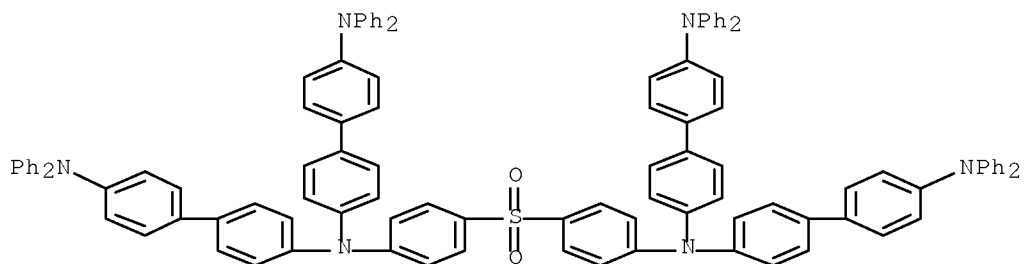


RN 167218-84-0 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(thiodi-4,1-phenylene)bis[N-[4'-[bis[4-(1,1-dimethylethyl)phenyl]amino][1,1'-biphenyl]-4-yl]-N',N'-bis[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)

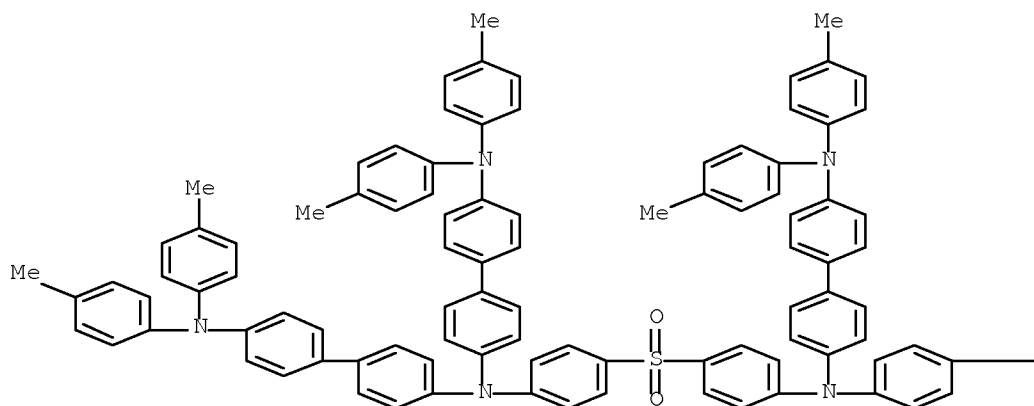


RN 167218-85-1 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(sulfonyldi-4,1-phenylene)bis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX NAME)

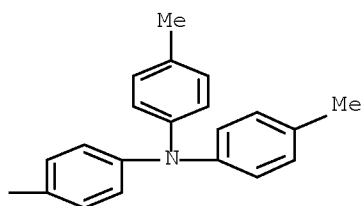


RN 167218-86-2 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(sulfonyldi-4,1-phenylene)bis[N-[4'-[bis(4-methylphenyl)amino]-[1,1'-biphenyl]-4-yl]-N',N'-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

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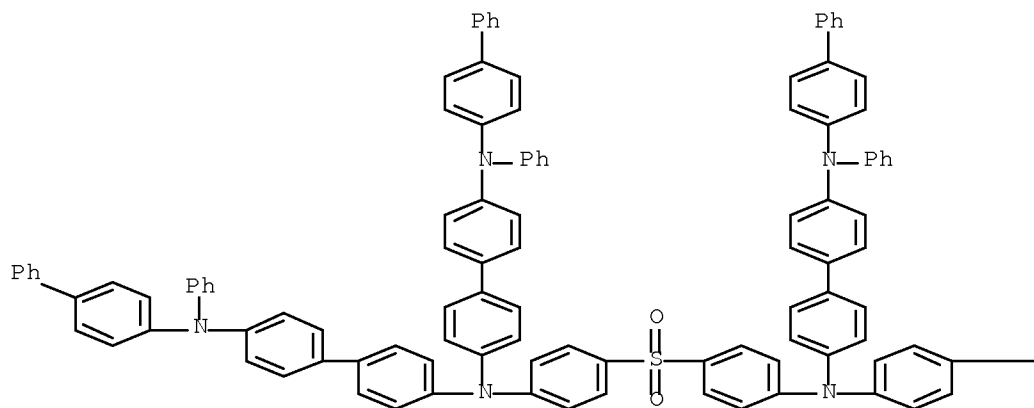


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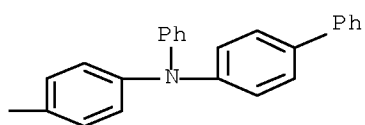


RN 167218-87-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(sulfonyldi-4,1-phenylene)bis[N'-[1,1'-biphenyl]-4-yl-N-[4'-([1,1'-biphenyl]-4-ylphenylamino)[1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)

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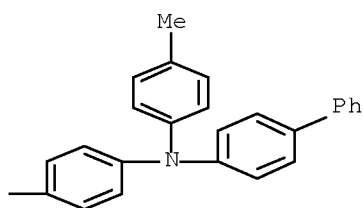
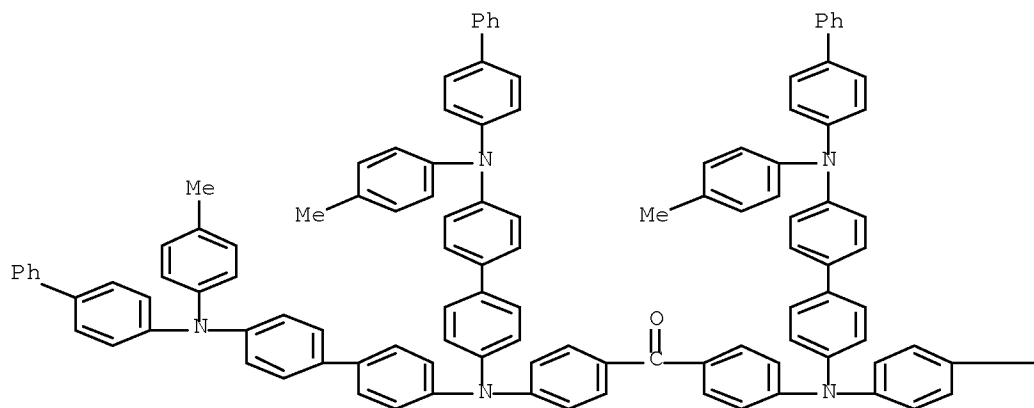


PAGE 1-B



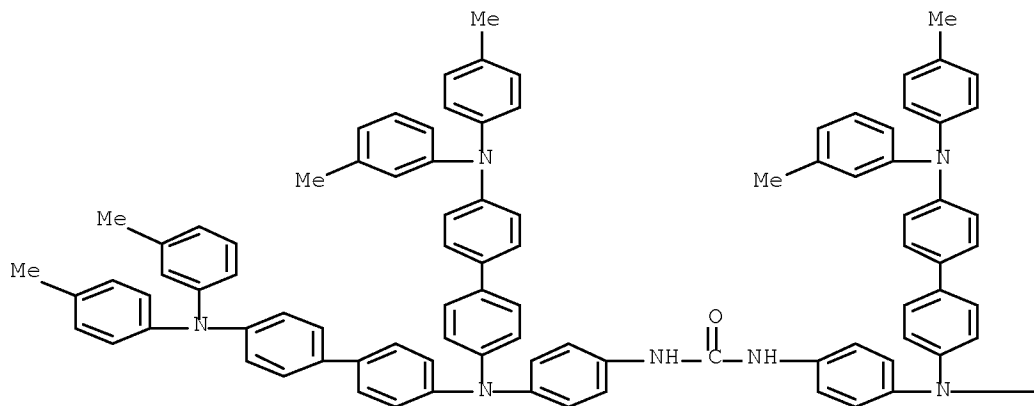
RN 167218-88-4 CAPLUS

CN Methanone, bis[4-[bis[4'-[[1,1'-biphenyl]-4-yl(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)

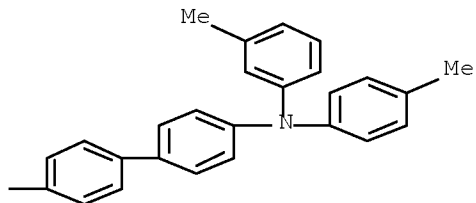


RN 167218-90-8 CAPLUS

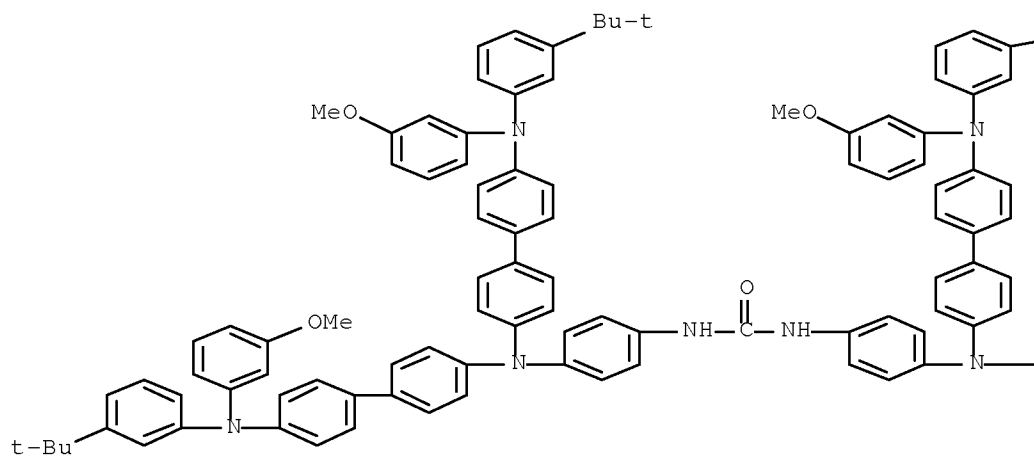
CN Urea, N,N'-bis[4-[bis[4'-[(3-methylphenyl)(4-methylphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)



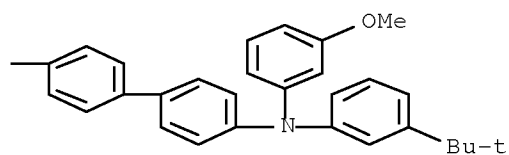
PAGE 1-B



RN 167218-91-9 CAPLUS  
 CN Urea, N,N'-bis[4-[bis[4'-[[3-(1,1-dimethylethyl)phenyl](3-methoxyphenyl)amino][1,1'-biphenyl]-4-yl]amino]phenyl]- (CA INDEX NAME)

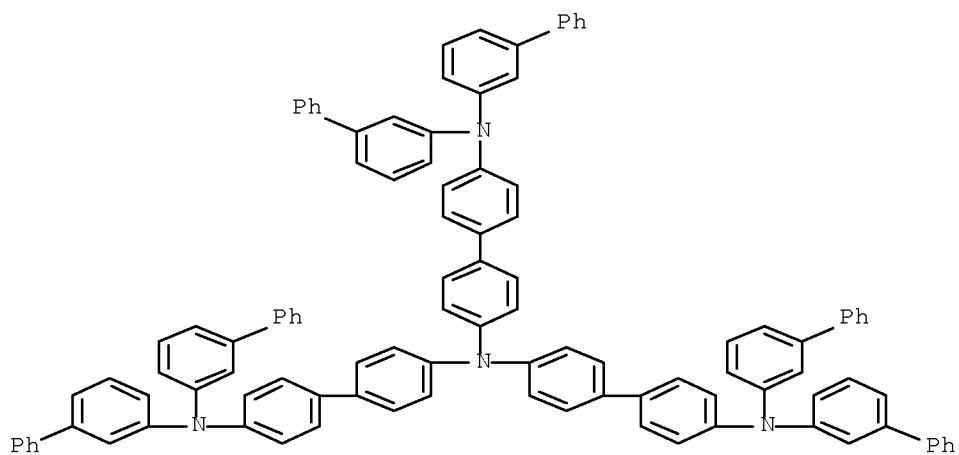


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RN 167218-98-6 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N-bis([1,1'-biphenyl]-3-yl)-N',N'-bis[4'-[bis([1,1'-biphenyl]-3-yl)amino][1,1'-biphenyl]-4-yl]- (9CI) (CA INDEX NAME)

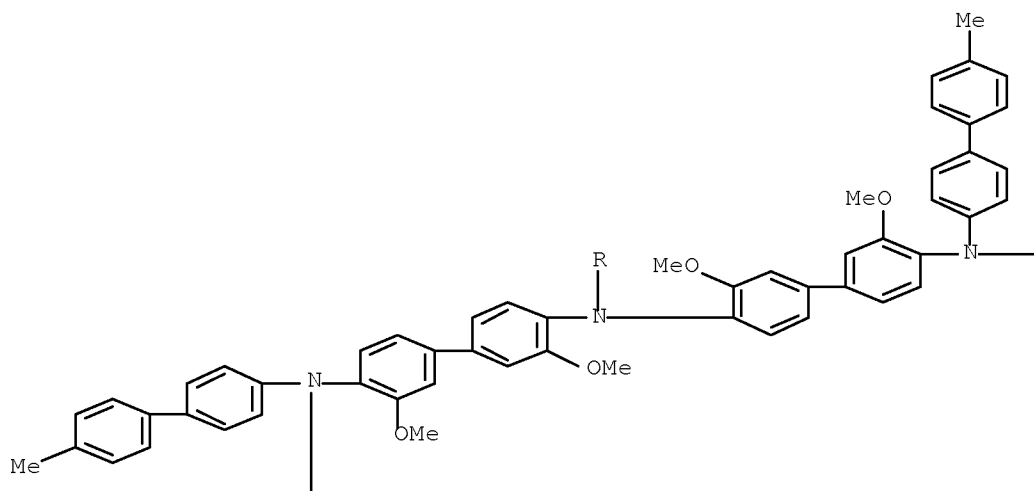




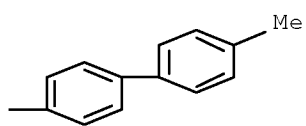
RN 167218-99-7 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4-bis[4'-[bis(4'-methyl[1,1'-biphenyl]-4-yl)amino]-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]-3,3'-dimethoxy-N4',N4'-bis(4'-methyl[1,1'-biphenyl]-4-yl)- (CA INDEX NAME)

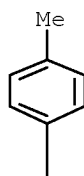
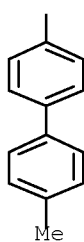
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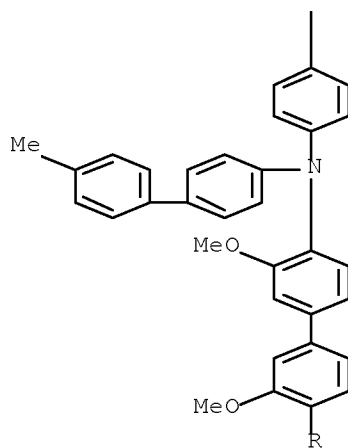
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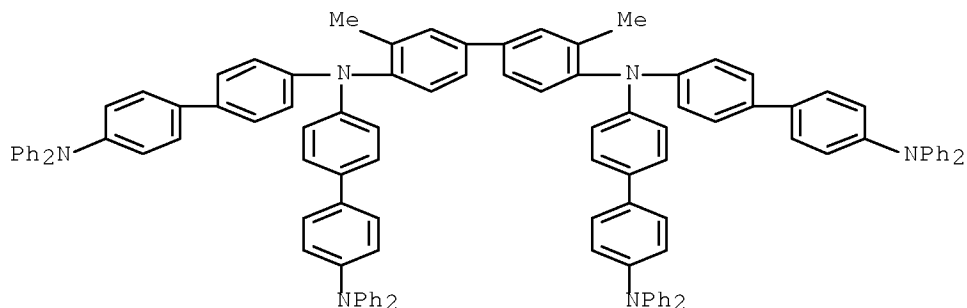
IT 167218-41-9P 167218-51-1P 167218-52-2P  
167218-53-3P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)

(amine compound as electron-transporting material for  
electroluminescent devices)

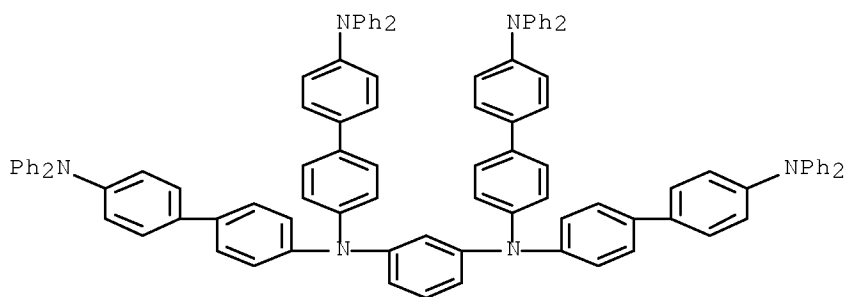
RN 167218-41-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-  
(diphenylamino)[1,1'-biphenyl]-4-yl]-3,3'-dimethyl- (CA INDEX NAME)



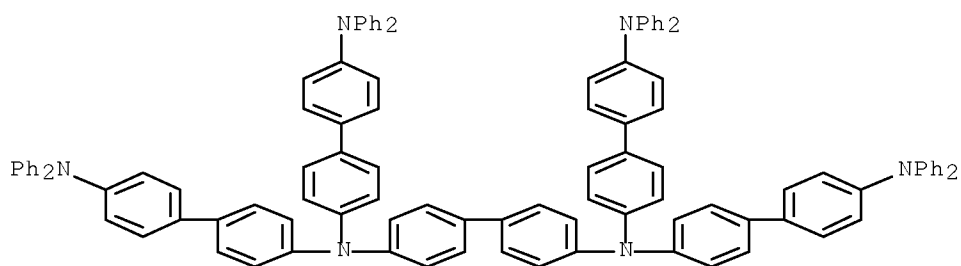
RN 167218-51-1 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N,N''-1,3-phenylenebis[N-[4'-  
(diphenylamino)[1,1'-biphenyl]-4-yl]-N',N'-diphenyl- (9CI) (CA INDEX  
NAME)

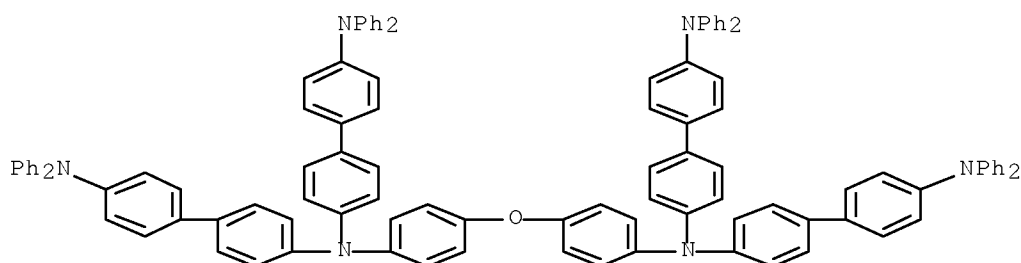


RN 167218-52-2 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4'-  
(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA INDEX NAME)



RN 167218-53-3 CAPLUS  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'-(oxydi-4,1-phenylene)bis[N-(4'-(diphenylamino)[1,1'-biphenyl]-4-yl)-N',N'-diphenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 13 THERE ARE 13 CAPLUS RECORDS THAT CITE THIS RECORD (18 CITINGS)

L9 ANSWER 84 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:489867 CAPLUS Full-text

DOCUMENT NUMBER: 122:277531

ORIGINAL REFERENCE NO.: 122:50397a,50400a

TITLE: Trisarylaminobenzene derivatives, compounds for organic electroluminescent element, and organic electroluminescent element.

INVENTOR(S): Shirota, Yasuhiko; Nakaya, Kenji; Okada, Norihiro; Namba, Kenryo

PATENT ASSIGNEE(S): Japan

SOURCE: Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

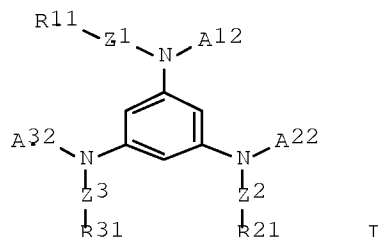
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 611148	A1	19940817	EP 1994-300954	19940209
EP 611148	B1	19980603		
R: DE, FR, GB				
JP 07097355	A	19950411	JP 1994-36605	19940209
JP 3419534	B2	20030623		

US 5508136 A 19960416 US 1994-194145 19940210  
 PRIORITY APPLN. INFO.: JP 1993-45785 A 19930210  
 JP 1993-140041 A 19930519  
 ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OTHER SOURCE(S): MARPAT 122:277531  
 GI



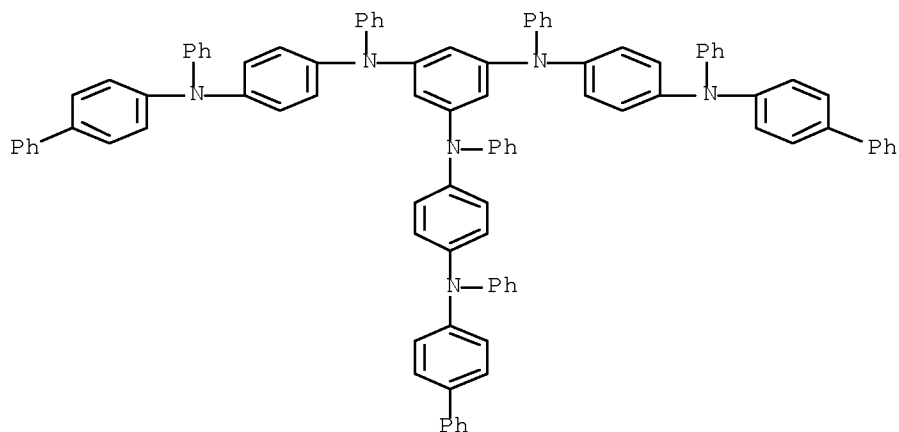
AB Novel trisarylamino benzene derivs. are represented by the formula I [Z1, Z2, and Z3 = divalent aromatic ring residues, R11, R21, and R31 = groups represented by -NZ1Z2, -NHZ1, -NR1Z1, -Z1, -OZ1 or -SZ1 wherein each of Z1 and Z2 = a monovalent aromatic ring residue, and R1 is an alkyl group, ≥1 of R11, R21, and R31 being a group represented by -NZ1Z2, -NHZ1 or -NR1Z1, and A12, A22, and A32 = aromatic residues, alkyl groups or H]. An organic electroluminescent element which uses the compound in an organic compound layer, especially in a hole injection transport layer provides uniform plane light emission and is durable enough to maintain luminance.

IT 162879-23-4

RL: MOA (Modifier or additive use); USES (Uses)  
 (electroluminescent element component)

RN 162879-23-4 CAPLUS

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-([1,1'-biphenyl]-4-ylphenylamino)phenyl]-N1,N3,N5-triphenyl- (CA INDEX NAME)



OS.CITING REF COUNT: 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS  
RECORD (14 CITINGS)

=> d ibib abs hitstr 775-79  
'775-79' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS ----- GI and AB  
ALL ----- BIB, AB, IND, RE  
APPS ----- AI, PRAI  
BIB ----- AN, plus Bibliographic Data and PI table (default)  
CAN ----- List of CA abstract numbers without answer numbers  
CBIB ----- AN, plus Compressed Bibliographic Data  
CLASS ----- IPC, NCL, ECLA, FTERM  
DALL ----- ALL, delimited (end of each field identified)  
DMAX ----- MAX, delimited for post-processing  
FAM ----- AN, PI and PRAI in table, plus Patent Family data  
FBIB ----- AN, BIB, plus Patent FAM  
IND ----- Indexing data  
IPC ----- International Patent Classifications  
MAX ----- ALL, plus Patent FAM, RE  
PATS ----- PI, SO  
SAM ----- CC, SX, TI, ST, IT  
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;  
SCAN must be entered on the same line as the DISPLAY,  
e.g., D SCAN or DISPLAY SCAN)  
STD ----- BIB, CLASS  
  
IABS ----- ABS, indented with text labels  
IALL ----- ALL, indented with text labels  
IBIB ----- BIB, indented with text labels  
IMAX ----- MAX, indented with text labels  
ISTD ----- STD, indented with text labels  
  
OBIB ----- AN, plus Bibliographic Data (original)  
OIBIB ----- OBIB, indented with text labels  
  
SBIB ----- BIB, no citations  
SIBIB ----- IBIB, no citations  
  
HIT ----- Fields containing hit terms  
HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)  
containing hit terms  
HITRN ----- HIT RN and its text modification  
HITSTR ----- HIT RN, its text modification, its CA index name, and  
its structure diagram  
HITSEQ ----- HIT RN, its text modification, its CA index name, its  
structure diagram, plus NTE and SEQ fields  
FHITSTR ----- First HIT RN, its text modification, its CA index name, and  
its structure diagram  
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its  
structure diagram, plus NTE and SEQ fields  
KWIC ----- Hit term plus 20 words on either side  
OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field  
codes. For a list of the display field codes, enter HELP DFIELDS at  
an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST;

TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.

ENTER DISPLAY FORMAT (BIB):end

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L9 ANSWER 75 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:563428 CAPLUS Full-text

DOCUMENT NUMBER: 127:254633

ORIGINAL REFERENCE NO.: 127:49637a,49640a

TITLE: Temperature dependences of ~~electroluminescent~~ characteristics in the devices fabricated with novel triphenylamine derivatives

AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori

CORPORATE SOURCE: Toyota Central Research and Development Laboratories, Inc., Aichi, 480-11, Japan

SOURCE: IEEE Transactions on Electron Devices (1997), 44(8), 1239-1244

CODEN: IETDAI; ISSN: 0018-9383

PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

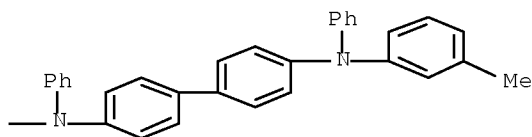
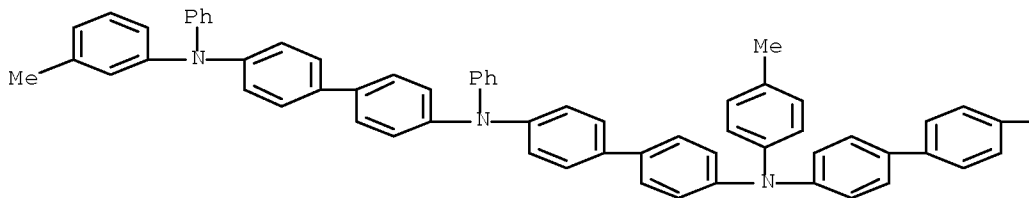
AB We studied the temperature dependences of the ~~electroluminescent~~ (EL) characteristics of two-layer devices fabricated using four hole-transporting materials based on triphenylamine, and a typical emitting material, tris(8-quinolinolato) aluminum. The thermal stability of the organic EL devices is clearly seen to depend on the glass transition temperature (Tg) of the hole-transporting material. The EL device with a pentamer of triphenylamine exhibits uniform light emission in a continuous operation up to 155° without breakdown. A lowering of the turn-on voltage for light emission and an increase of luminous efficiency with increasing temperature are found in the devices. Excellent durability of continuous operation is also achieved at high temps. Our results indicate that the linear linkage of triphenylamine provides the high Tg material and the high device performance at high temps.

IT 189196-94-9

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(hole-transport layer in ~~electroluminescent~~ device and device thermal stability related to glass transition temperature)

RN 189196-94-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-[4'-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino][1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 44 THERE ARE 44 CAPLUS RECORDS THAT CITE THIS  
RECORD (44 CITINGS)  
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 76 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:269788 CAPLUS Full-text

DOCUMENT NUMBER: 126:349527

ORIGINAL REFERENCE NO.: 126:67847a,67850a

TITLE: Thermal stability in oligomeric  
triphenylamine/tris(8-quinolinolato) aluminum  
electroluminescent devices

AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada,  
Akane; Taga, Yasunori

CORPORATE SOURCE: Toyota Central Research and Development Laboratories,  
Inc., Nagakute, 480-11, Japan

SOURCE: Applied Physics Letters (1997), 70(15), 1929-1931  
CODEN: APPLAB; ISSN: 0003-6951

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thermal stability of the ~~electroluminescent~~ (EL) devices using various hole-  
transporting materials based on triphenylamine, and a typical emitting  
material, tris(8-quinolinolato) Al was systematically studied. The thermal  
stability of the EL devices is clearly seen to depend on the glass transition  
temperature (Tg) of the hole-transporting material. The highest thermal  
stability up to 155° was obtained in the device using the pentamer of  
triphenylamine. The linear linkage of triphenylamine is useful to attain high  
Tg rather than the branch linkage.

IT 189196-94-9

RL: DEV (Device component use); USES (Uses)  
(thermal stability in oligomeric triphenylamine/tris(8-quinolinolato)  
aluminum ~~electroluminescent~~ devices)

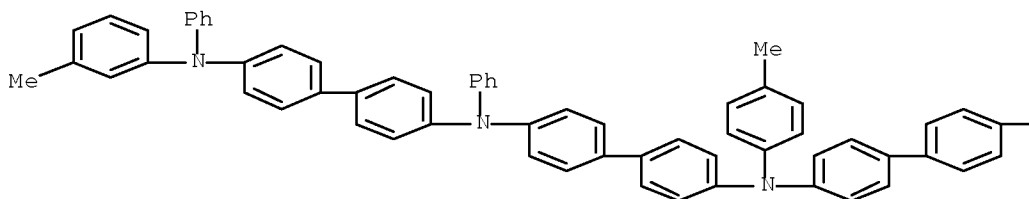
RN 189196-94-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-[4'-[(3-  
methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-[4'-[[4'-[(3-

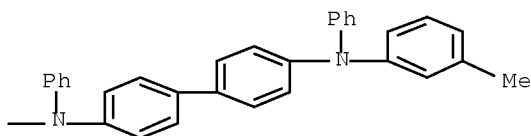


methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino][1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



OS.CITING REF COUNT:	171	THERE ARE 171 CAPLUS RECORDS THAT CITE THIS RECORD (172 CITINGS)
REFERENCE COUNT:	15	THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 77 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:224293 CAPLUS Full-text

DOCUMENT NUMBER: 126:299493

ORIGINAL REFERENCE NO.: 126:57857a, 57860a

TITLE: Thermal stability of electroluminescent  
devices fabricated using novel charge-transporting  
materials

AUTHOR(S): Tokito, Shizuo; Tanaka, Hiromitsu; Noda, Koji; Okada, Akane; Taga, Yasunori

CORPORATE SOURCE: Toyota Central Research and Development Laboratories  
Inc., Aichi, 480-11, Japan

SOURCE: Polymer Preprints (American Chemical Society, Division  
of Polymer Chemistry) (1997), 38(1), 388-389  
CODEN: ACPPAY; ISSN: 0032-3934

PUBLISHER: American Chemical Society, Division of Polymer Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Novel electron- and hole-transporting materials for the electroluminescent devices are described. The basic structures of the hole-transporting materials are a linear or branch linkages of triphenylamine moiety. The electron-transporting materials are based on oxadiazole moiety with branched or twisted structures. The electroluminescent characteristics of these materials and devices based on them are also presented.

IT 189196-94-9

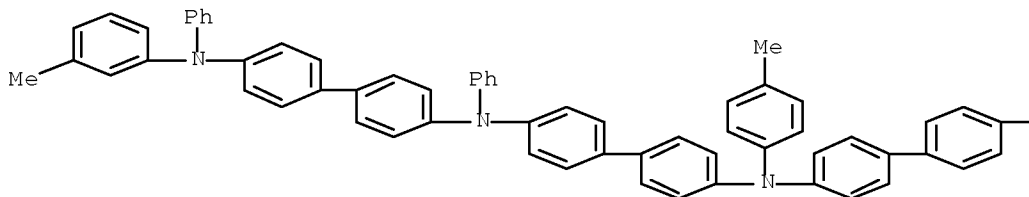
RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(thermal stability of electroluminescent devices fabricated

using novel charge-transporting materials)

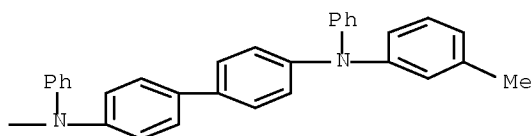
RN 189196-94-9 CAPLUS

CN [1,1'-Biphenyl]-4,4'-diamine, N-(4-methylphenyl)-N'-[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]-N-[4'-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino][1,1'-biphenyl]-4-yl]-N'-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



OS.CITING REF COUNT: 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

L9 ANSWER 78 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1997:154641 CAPLUS Full-text

DOCUMENT NUMBER: 126:164231

ORIGINAL REFERENCE NO.: 126:31619a,31622a

TITLE: Hole-transporting material and organic electroluminescent device and

electrophotographic photoreceptor using it

INVENTOR(S): Tamano, Michiko; Onikubo, Shunichi; Enokida, Toshio

PATENT ASSIGNEE(S): Toyo Ink Mfg Co, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

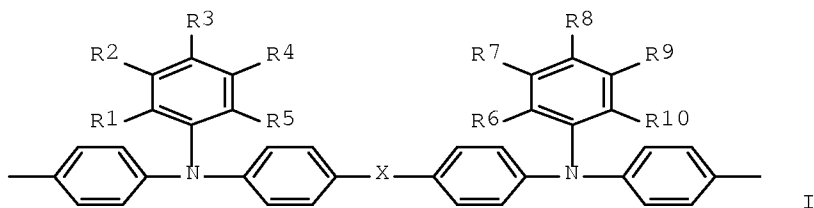
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08314169	A	19961129	JP 1995-121026	19950519
JP 3640090	B2	20050420		

PRIORITY APPLN. INFO.: JP 1995-121026 19950519

GI



AB The title material has the general formula HA(BA)<sub>n</sub>BAH [A = diamine derivative residue I; R<sub>1</sub>-R<sub>10</sub> = H, halo, (substituted) alkyl, (substituted) alkoxy, (substituted) thioalkoxy, CN, (mono- or di-substituted) amino, OH, SH, (substituted) aryloxy, (substituted) arylthio, (substituted) aromatic ring, (substituted) heterocyclic ring (these adjacent substituents may form aliphatic, aromatic or heterocyclic rings which may be substituted); X = O, S, Se; B = linking group CYZ; Y, Z = H, halo, (substituted) alkyl, (substituted) aromatic ring, (substituted) heterocyclic ring, Y and Z may form an aliphatic, aromatic or heterocyclic ring which may be substituted; n = 1-5000]. The ~~electroluminescent~~ device, comprising ≥1 organic compound thin film-made luminescent layers sandwiched between a pair of electrodes, contains the material in ≥1 of the layers. The photoreceptor contains a charge-generating material and the pos. hole-transporting material on a conductive support. The ~~electroluminescent~~ device shows high luminescent efficiency, brightness, and durability and the photoreceptor gives clear images in repeated use.

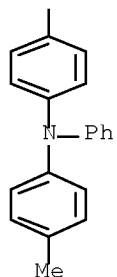
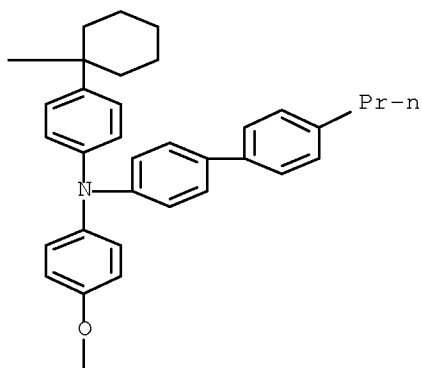
IT 186672-07-1

RL: DEV (Device component use); USES (Uses)  
(electrophotog. photoreceptor and ~~electroluminescent~~ device  
containing aromatic polyamine hole-transporting material)

RN 186672-07-1 CAPLUS

CN [1,1'-Biphenyl]-4-amine, N-[4-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)phenylamino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl]-N-[4-[1-[4-[(4-methylphenyl)[4-[4-[phenyl(4'-propyl[1,1'-biphenyl]-4-yl)amino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl]-4'-propyl- (9CI)  
(CA INDEX NAME)





L9 ANSWER 79 OF 84 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 1997:113482 CAPLUS Full-text  
 DOCUMENT NUMBER: 126:118346  
 ORIGINAL REFERENCE NO.: 126:22853a,22856a  
 TITLE: Cyclic phosphazene compounds for organic  
 electroluminescent membranes  
 INVENTOR(S): Shigehara, Junko; Nakanaga, Takefumi; Tada, Juji;  
 Inoe, Tetsuji; Nakatani, Kenji  
 PATENT ASSIGNEE(S): Otsuka Kagaku KK, Japan; TDK Electronics Co., Ltd.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 08283416	A	19961029	JP 1995-113755	19950414
JP 3560259	B2	20040902		

PRIORITY APPLN. INFO.:

JP 1995-113755

19950414

OTHER SOURCE(S): MARPAT 126:118346

AB The title compds. are prepared by reacting hexachlorocyclotriphosphazene or octachlorocyclotetraphosphazene with N,N'-diphenyl-N-(3-methylphenyl)-N'-(3-hydroxyphenyl)-1,1'-biphenyl-4,4'-diamine (prepared from N,N'-Diphenylbenzidine) then optionally with phenol.

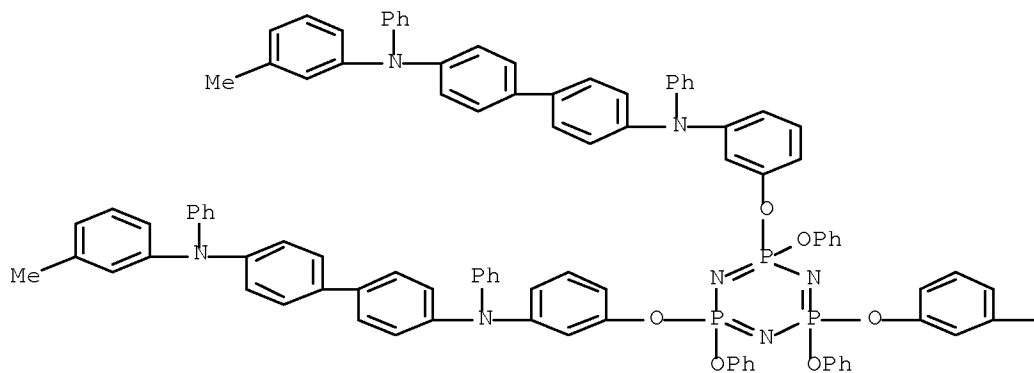
IT ~~186139-88-8P~~ ~~186139-89-9P~~ ~~186139-91-3P~~

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(cyclic phosphazene compds. for organic electroluminescent membranes)

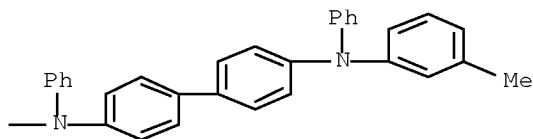
RN 186139-88-8 CAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,4,6-tris[3-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino]phenoxy]-2,4,6-triphenoxy- (9CI) (CA INDEX NAME)

PAGE 1-A



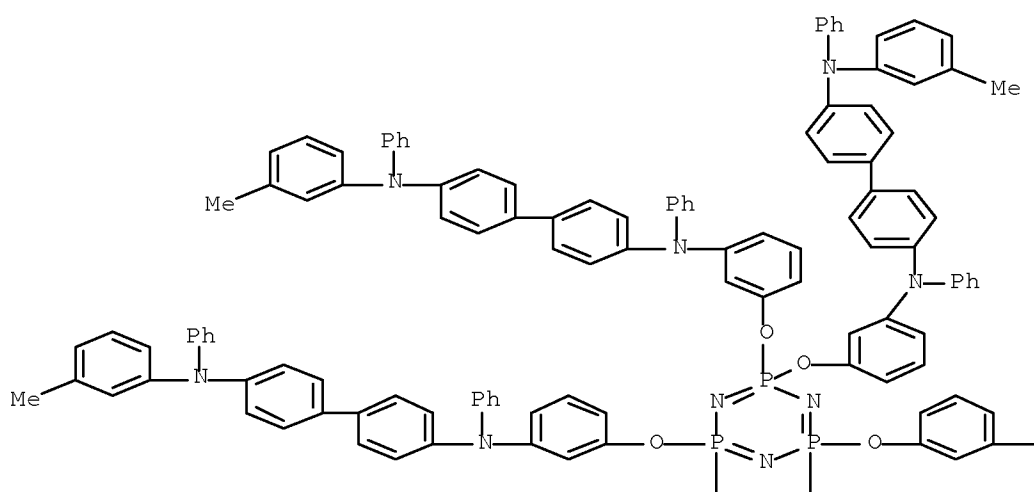
PAGE 1-B



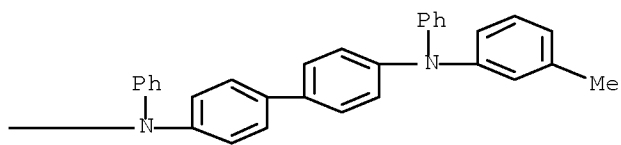
RN 186139-89-9 CAPLUS

CN 1,3,5,2,4,6-Triazatriphosphorine, 2,2,4,4,6,6-hexahydro-2,2,4,4,6,6-hexakis[3-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino]phenoxy]- (9CI) (CA INDEX NAME)

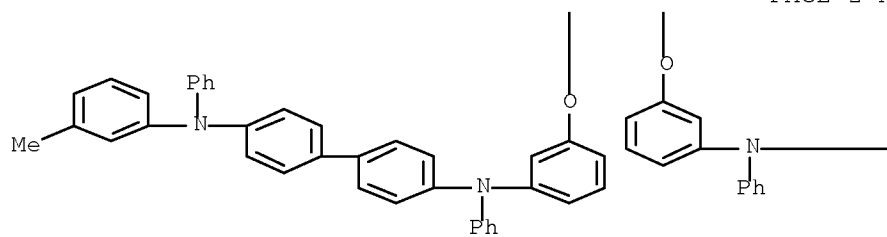
PAGE 1-A

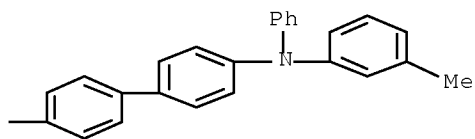


PAGE 1-B

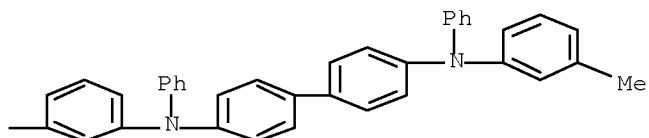
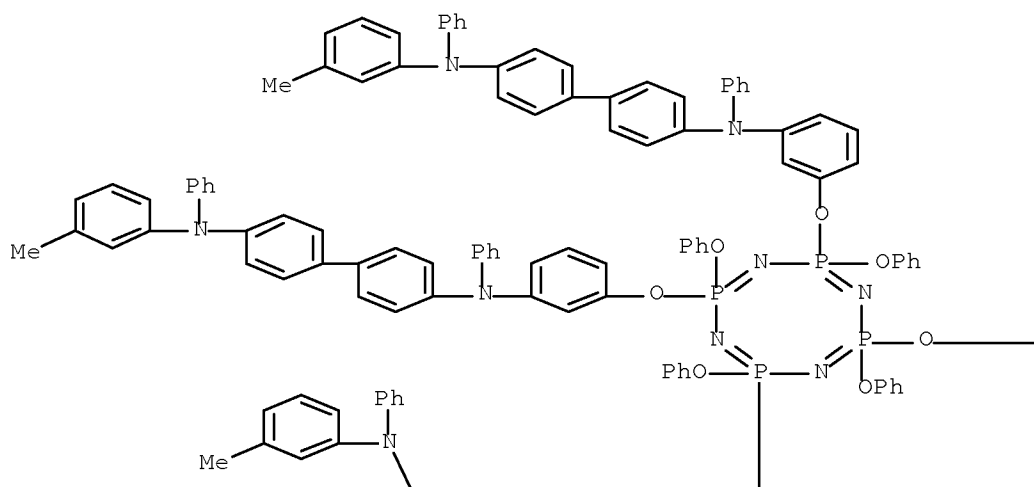


PAGE 2-A



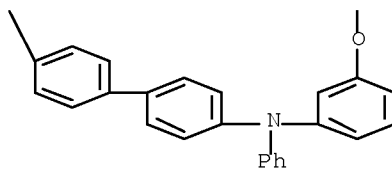


RN 186139-91-3 CAPLUS  
 CN 1,3,5,7,2,4,6,8-Tetrazatetraphosphocine,  
 2,2,4,4,6,6,8,8-octahydro-2,4,6,8-tetrakis[3-[[4'-[(3-methylphenyl)phenylamino][1,1'-biphenyl]-4-yl]phenylamino]phenoxy]-2,4,6,8-tetraphenoxy- (9CI) (CA INDEX NAME)





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=> FILE REG

FILE 'REGISTRY' ENTERED AT 12:15:18 ON 04 AUG 2010  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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=> D HIS

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L2 18 S 15<RID.CNT (T) 46.150.18/RID  
L3 10 S L2 AND 7<N

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L5 28615 S YOKOYAMA ?/AU  
L6 24332 S TANIGUCHI ?/AU  
L7 18873 S ICHIKAWA ?/AU  
L8 7 S L4 AND L5 AND L6 AND L7  
SEL L8 2,4,6 RN

FILE 'REGISTRY' ENTERED AT 11:22:36 ON 04 AUG 2010

L9 17 S E1-E17  
L10 10033 S L2  
L11 79 S L10 AND 7/N  
L12 57937 S 9<RID.CNT (T) 46.150.18/RID  
L13 21904 S L12 AND 2<N  
L14 913700 S C H N/ELF AND 3/ELC.SUB  
L15 2074 S L13 AND L14  
L16 1895 S L10 AND 7<N  
L17 775 S L16 NOT M/ELS  
L18 113 S L16 AND L14  
L19 662 S L17 NOT L18  
L20 2 S L18 AND L9

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L23 511 S L19  
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L25 34 S L22 AND L24  
L26 78 S L22 NOT (L21 OR L25)  
L27 46 S L23 AND L24  
L28 41 S L27 NOT (L21 OR L25 OR L26)  
L29 29 S L25 NOT L21  
L30 78 S L26 NOT (L21 OR L29)  
L31 41 S L28 NOT (L21 OR L29 OR L30)  
L32 3 S 1808-2005/PY,PRY,AY AND L21  
L33 22 S 1808-2005/PY,PRY,AY AND L29  
L34 54 S 1808-2005/PY,PRY,AY AND L30

L35            28 S 1808-2005/PY,PRY,AY AND L31  
              SEL L34 1-54 HIT RN

FILE 'REGISTRY' ENTERED AT 11:50:12 ON 04 AUG 2010

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              E C138H120N10/MF  
L38           1 S E3  
              E C174H198N10/MF  
L39           1 S E3  
              E C154H126N8/MF  
L40           2 S E3  
              E C162H134N8/MF  
L41           1 S E3  
              E C176H132N18/MF  
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              E C120H99N9/MF  
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L44           1 S E3  
              E C126H96N10/MF  
L45           2 S E3  
              E C180H120N12/MF  
L46           1 S E3  
              E C156H108N12/MF  
L47           3 S E3  
L48           12 S L36 AND (L37-L47)

FILE 'HCA' ENTERED AT 12:13:49 ON 04 AUG 2010

L49           17 S L48  
L50           13 S 1808-2005/PY,PRY,AY AND L49  
              SEL L35 1-28 HIT RN

FILE 'REGISTRY' ENTERED AT 12:17:43 ON 04 AUG 2010

L51           46 S E1-E46  
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              E C170H124F28N8O4/MF  
L54           1 S E3  
              E C111H80CL2F6N8/MF  
L55           1 S E3  
              E C202H184N8O4/MF  
L56           1 S E3  
              E C99H74F6N8/MF  
L57           1 S E3  
              E C190H160N8O8/MF  
L58           1 S E3  
L59           7 S L51 AND (L52-L58)

FILE 'HCA' ENTERED AT 12:26:05 ON 04 AUG 2010  
L60 2 S L59  
L61 2 S 1808-2005/PY,PRY,AY AND L60  
L62 2 S L61 AND L24

=> FILE HCA

FILE 'HCA' ENTERED AT 12:15:26 ON 04 AUG 2010  
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COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

INVENTORS' COMPOUNDS:

=> D L32 1-3 BIB ABS HITSTR HITRN

L32 ANSWER 1 OF 3 HCA COPYRIGHT 2010 ACS on STN  
AN 153:130196 HCA Full-text  
TI Aryl amine compound for organic electroluminescent device  
IN Miki, Tetsuzo; Taniguchi, Yoshio  
PA Hodogaya Chemical Co., Ltd., Japan  
SO Jpn. Tokkyo Koho, 12pp.  
CODEN: JTXXFF  
DT Patent  
LA Japanese  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 4491264	B2	20100630	JP 2004-90334	20040325
	JP 2007084439	A	20070405		
	WO 2005094133	A1	20051006	WO 2005-JP6426	20050325
	EP 1748681	A1	20070131	EP 2005-727462	20050325
	CN 1934911	A	20070321	CN 2005-80009543	20050325
	CN 100505966	C	20090624		
	KR 2007010009	A	20070119	KR 2006-719734	20060925
	US 20070285004	A1	20071213	US 2007-594239	20070614
PRAI	JP 2004-89836	A	20040325		
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	WO 2005-JP6426	W	20050325		

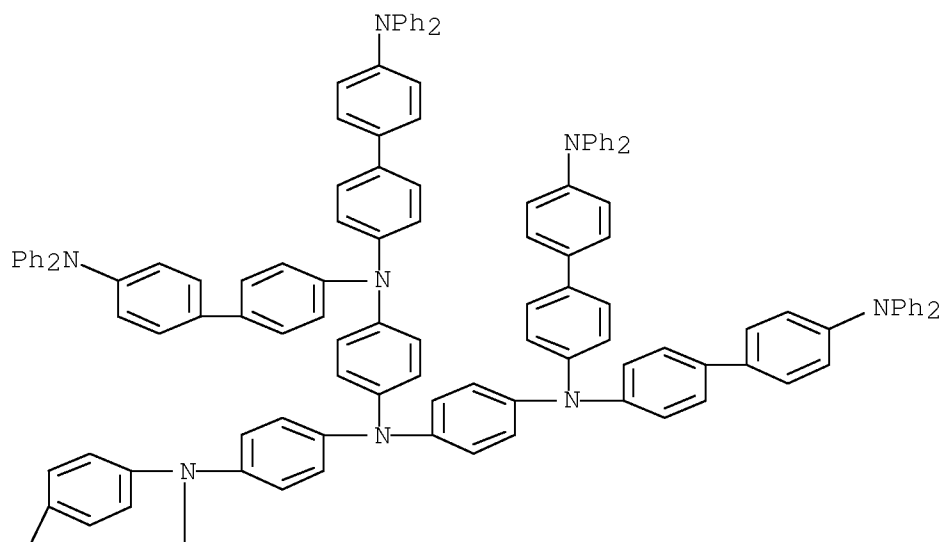
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention refers to an aryl amine compd. N((Ph)-N((Ph-Ph)N(Ph)Ph-  
N(Ph)(Ph-Ph)-N(Ph)2.)2)3 or N(Ph-N((Ph-Ph)N(Ph)(Ph-3-Me))2)2 used as org.  
material in an org. electroluminescent device.

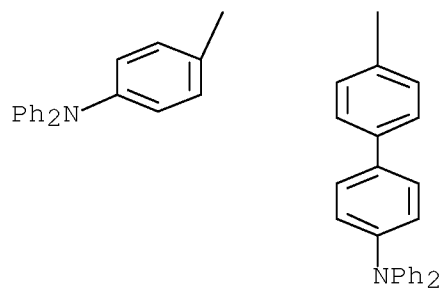
IT ~~866024-27-3P~~  
(aryl amine compd. for org. electroluminescent device)

RN 866024-27-3 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'',N4''''-(nitrilotri-4,1-phenylene)tris[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 866024-27-3P  
 (aryl amine compd. for org. electroluminescent device)  
 OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)  
 L32 ANSWER 2 OF 3 HCA COPYRIGHT 2010 ACS on STN  
 AN 146:316606 HCA Full-text  
 TI Preparation of arylamine compounds as organic electroluminescent materials

IN Miki, Tetsuzo; Yokoyama, Norimasa; Taniguchi, Yoshio; Ichikawa, Musubu  
PA Hodogaya Chemical Co., Ltd., Japan; Shinshu University  
SO PCT Int. Appl., 27pp.  
CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE -----
PI	WO 2007026846	A1	20070308	WO 2006-JP317272	20060831
	EP 1942098	A1	20080709	EP 2006-797232	20060831
	KR 2008038383	A	20080506	KR 2008-705180	20080229
	CN 101253145	A	20080827	CN 2006-80032045	20080229
	US 20090278442	A1	20091112	US 2008-65417	20080229
PRAI	JP 2005-251968	A	20050831		
	WO 2006-JP317272	W	20060831		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 146:316606

AB Title compds. I of 1500 to 6000 mol. wt. [X = single bond, CH, CH<sub>2</sub>, etc.; Ar<sub>1</sub>, Ar<sub>2</sub> = (un)substituted phenylene, biphenylene or ter-phenylene; R<sub>1</sub>-R<sub>4</sub> = aryl (wherein aryl may be substituted with a diarylamino so as to form a triphenylamine partial structure and terminal aryl may repeat itself and may be substituted with a diarylamino so as to form a triphenylamine-like partial structure.); m = 0-2; n = 0, 1] were prepd. Thus, Pd(OAc)<sub>2</sub> catalyzed reaction of N,N-bis(4'-diphenylaminophenyl-4-yl)amine with 1,3,5-tris(4-bromophenyl)benzene afforded compd. II, which showed green electroluminescence with luminous efficiency of 4.31 (5000 cd/m<sup>2</sup>) and 4.37 (10000 cd/m<sup>2</sup>).

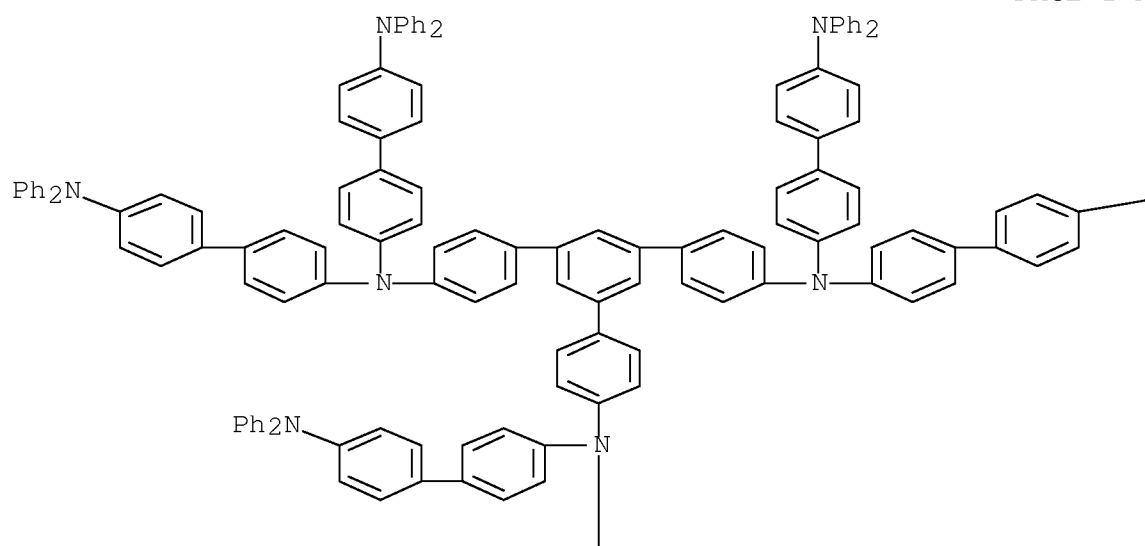
IT 928326-84-5P

(prepn. of arylamine compds. as org. electroluminescent materials)

RN 928326-84-5 HCA

CN [1,1':3',1''-Terphenyl]-4,4''-diamine,  
5'-[4-[bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]amino]phenyl]-  
N<sub>4</sub>,N<sub>4</sub>,N<sub>4</sub>'',N<sub>4</sub>''-tetrakis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]- (CA  
INDEX NAME)

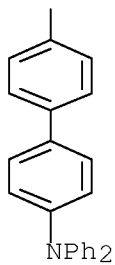
PAGE 1-A



PAGE 1-B

—NPh<sub>2</sub>

PAGE 2-A



IT 928326--84--5P  
(prepn. of arylamine compds. as org. electroluminescent materials)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)  
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L32 ANSWER 3 OF 3 HCA COPYRIGHT 2010 ACS on STN  
AN 143:356354 HCA Full-text  
TI Arylamine compound and organic electroluminescent device  
IN Miki, Tetsuzo; Tarumoto, Naohiro; Taniguchi, Yoshio; Ichikawa, Musubu  
PA Hodogaya Chemical Co., Ltd., Japan; Shinshu University  
SO PCT Int. Appl., 42 pp.  
CODEN: PIXXD2

DT Patent  
LA Japanese

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005094133	A1	20051006	WO 2005-JP6426	20050325
	JP 4491264	B2	20100630	JP 2004-90334	20040325
	JP 2007084439	A	20070405		
	EP 1748681	A1	20070131	EP 2005-727462	20050325
	CN 1934911	A	20070321	CN 2005-80009543	20050325
	CN 100505966	C	20090624		
	KR 2007010009	A	20070119	KR 2006-719734	20060925
	US 20070285004	A1	20071213	US 2007-594239	20070614
PRAI	JP 2004-89836	A	20040325		
	JP 2004-90334	A	20040325		
	WO 2005-JP6426	W	20050325		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 143:356354

AB Disclosed is an arylamine compd. represented by the general formula (R5R6N-Ar3)n-X-[(Ar1-NR1R2)]-Ar2-NR3R4 which has a mol. wt. of not less than 1,500 and not more than 6,000. Also disclosed is an org. electroluminescent device contg. such a compd. The arylamine compd. has excellent hole injection/transporting characteristics, and enables to form a stable thin film. By using such a compd., an org. EL device can be greatly improved in the luminous efficiency and durability when compared with conventional org. EL devices.

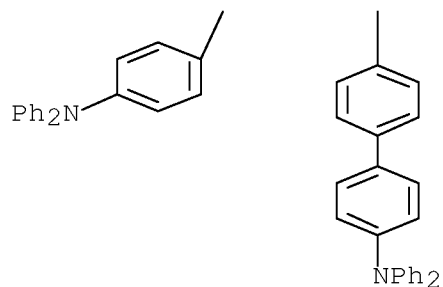
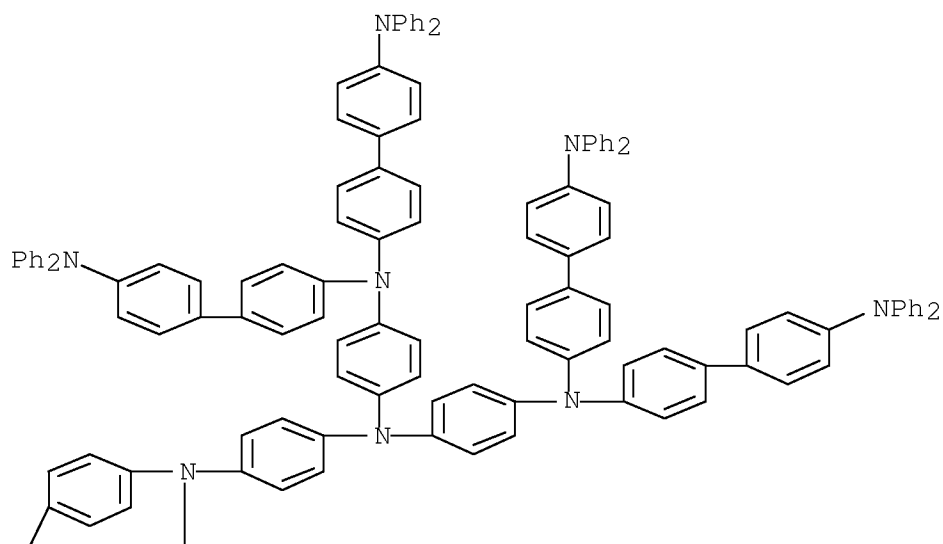
IT 866024-27-3P

(arylamine compd. and org. electroluminescent device)

RN 866024-27-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'',N4'''-(nitrilotri-4,1-phenylene)tris[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-N4',N4'-diphenyl- (CA INDEX NAME)





IT 866024-27-3P

(arylamine compd. and org. electroluminescent device)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> D L50 1-13 BIB ABS HITSTR HITRN

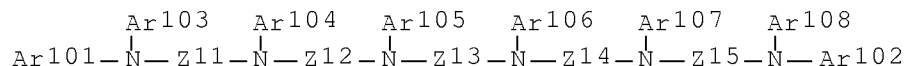
L50 ANSWER 1 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 146:326348 HCA Full-text

TI Electrophotographic photoconductors containing polyamine  
hole-transport agents, and electrophotographic apparatus and their

process cartridge  
 IN Tanaka, Takakazu; Ogaki, Harunobu; Kaku, Kenichi  
 PA Canon Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 27pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2007065164	A	20070315	JP 2005-249389	20050830
PRAI	JP 2005-249389		20050830		
OS	MARPAT 146:326348				
GI					



I

AB The photoconductors comprise elec. conductive supports and photosensitive layers consisting of intermediate layers contg. electron-transport agents, charge-generating layers, and charge-transport layers, wherein hole-transport agents I [Ar101-108 = monovalent (substituted) arom. hydrocarbon ring, arom. heterocycle; Z11-15 = divalent (substituted) arom. hydrocarbon ring, arom. heterocycle] with mol. wt. 1500-4000 are included in the charge-transport layers. Alternatively, the photoconductors contain different polyamine hole-transport agents (structure given). Electrophotog. app. employing the photoconductors but free from static eliminating means provide ghost-free high quality images.

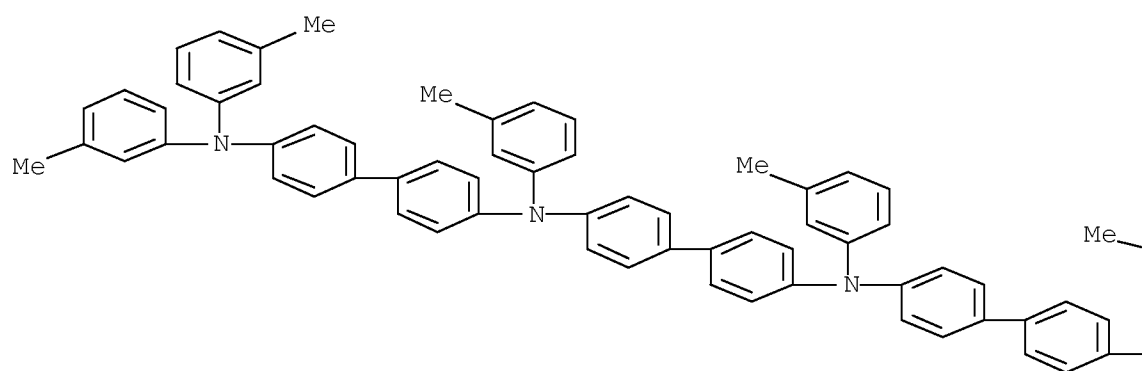
IT 928769-93-1

(hole-transport agents; electrophotog. photoconductors contg. polyamine hole-transport agents)

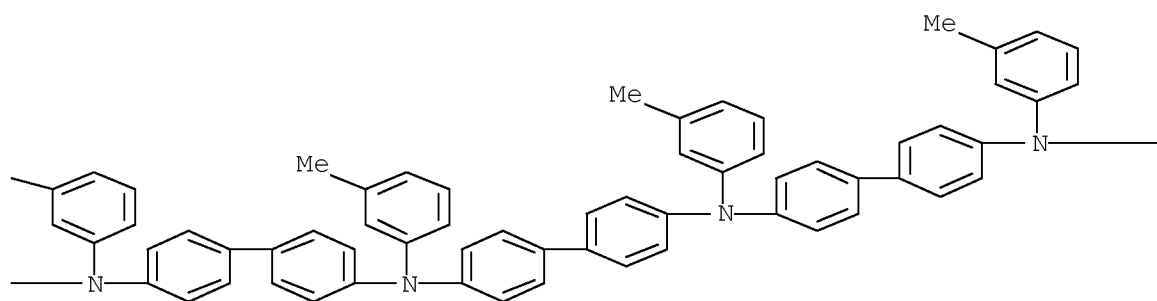
RN 928769-93-1 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[[4'-[[4'-[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl](3-methylphenyl)amino][1,1'-biphenyl]-4-yl](3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4'-bis(3-methylphenyl)- (CA INDEX NAME)

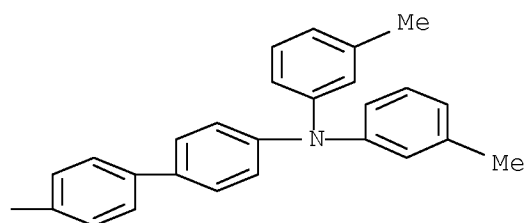
PAGE 1-A



PAGE 1-B



PAGE 1-C



(hole-transport agents; electrophotog. photoconductors contg.  
polyamine hole-transport agents)

L50 ANSWER 2 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 144:202662 HCA Full-text

TI Charge transport in amorphous molecular materials

AU Shirota, Yasuhiko; Okumoto, Kenji; Ohishi, Hitoshi; Tanaka, Masatake;  
Nakao, Masato; Wayaku, Kenjiro; Nomura, Satoyuki; Kageyama, Hiroshi  
CS Fukui Univ. of Technology, 3-6-1, Gakuen Fukui City, Fukui, 910-8505,  
Japan

SO Proceedings of SPIE-The International Society for Optical Engineering  
(2005), 5937(Organic Light-Emitting Materials and Devices  
IX), 593717/1-593717/10

CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

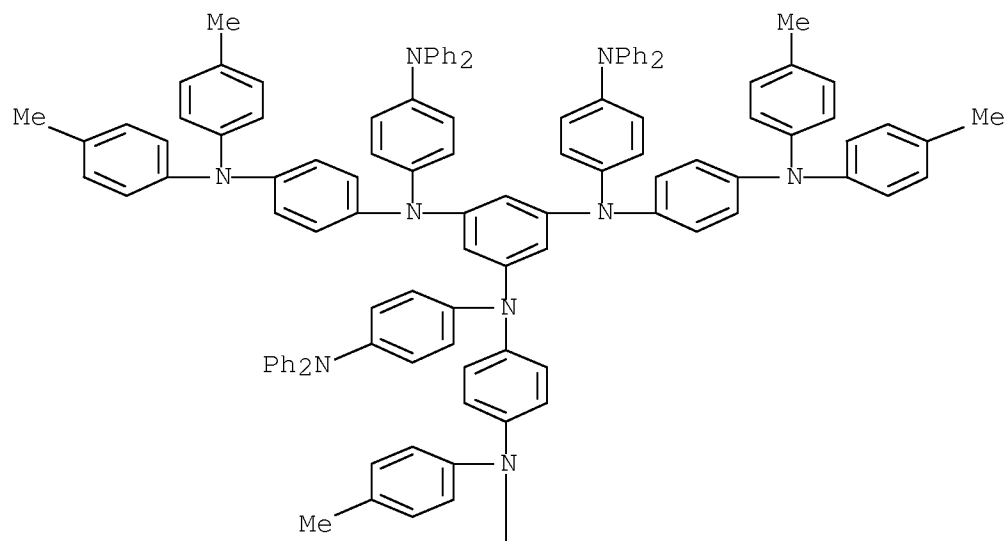
AB Charge carrier drift mobilities of hole-transporting amorphous mol. materials have been detd. by a time-of-flight method. Elec.-field and temp. dependencies of carrier mobilities have been analyzed in terms of the disorder formalism, and charge transport in amorphous mol. materials is discussed in relation to mol. structures. Hole-transporting amorphous mol. materials with high mobilities of the order of  $10^{-2} \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$  have been developed.

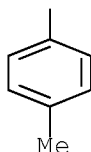
IT 874946-05-1

(charge-carrier drift mobilities of hole-transporting amorphous mol. materials by time-of-flight method)

RN 874946-05-1 HCA

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-[bis(4-methylphenyl)amino]phenyl]-N1,N3,N5-tris[4-(diphenylamino)phenyl]-  
(CA INDEX NAME)





IT 874946-05-1

(charge-carrier drift mobilities of hole-transporting amorphous  
mol. materials by time-of-flight method)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 3 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 143:268278 HCA Full-text

TI Fluorescent solvatochromism of bi-polar

N,N-diphenylaminoaryl-substituted hexaazatriphenylenes,  
tetraazaphenanthrene, and quinoxalines

AU Hirayama, Tomoyuki; Yamasaki, Sumio; Ameku, Hiroki; Ishi-i, Tsutomu;  
Thiemann, Thies; Mataka, Shuntaro

CS Department of Industrial Chemistry, Faculty of Engineering, Kyushu  
Sangyo University, Higashi-ku, Fukuoka, 813-8503, Japan

SO Dyes and Pigments (2005), 67(2), 105-110

CODEN: DYPIDX; ISSN: 0143-7208

PB Elsevier Ltd.

DT Journal

LA English

OS CASREACT 143:268278

AB 1,4,5,8,9,12-Hexaazatriphenylenes, 1,4,5,8-tetraazaphenanthrene, and  
quinoxalines, each with six, four, and two N,N-diphenylaminobiphenyl and  
N,N-diphenylaminophenyl groups, resp., were prepd. and their absorption and  
fluorescent spectral behaviors were investigated. These compds. showed  
strong fluorescent solvatochromism arising from the donor-acceptor nature of  
the  $\pi$ -electron-deficient arom. core and  $\pi$ -electron-rich diphenylamino  
terminal groups.

IT 847755-75-3

(dye; fluorescent solvatochromism of bipolar  
diphenylaminoaryl-substituted hexaazatriphenylenes)

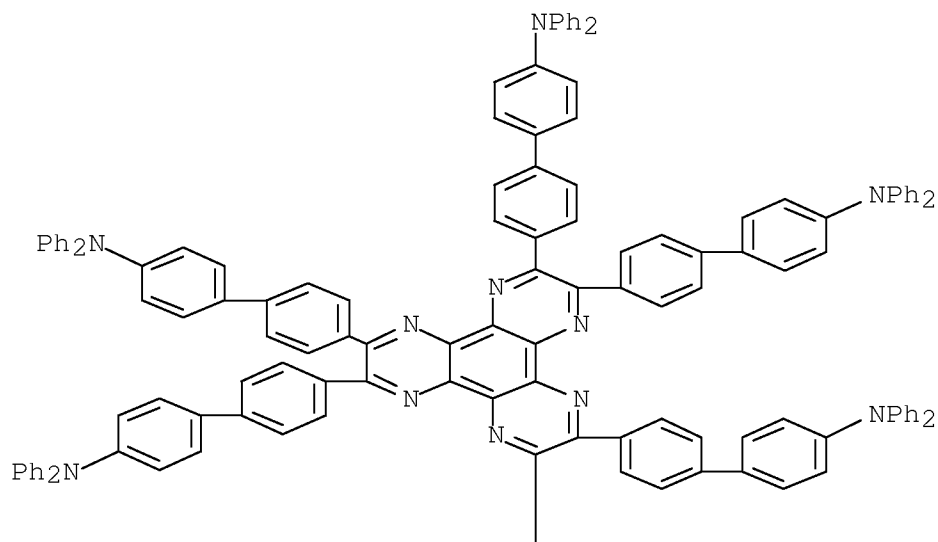
RN 847755-75-3 HCA

CN [1,1'-Biphenyl]-4-amine,

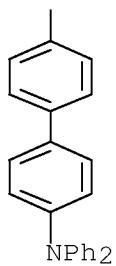
4',4''',4''''',4''''''',4''''''''',4''''''''''',4'''''''''''''-dipyrazino[2,3-f:2',3'-  
h]quinoxaline-2,3,6,7,10,11-hexaylhexas[1,1'-diphenyl- (9CI) (CA

INDEX NAME)

PAGE 1-A



PAGE 2-A



IT 847755-75-3

(dye; fluorescent solvatochromism of bipolar diphenylaminoaryl-substituted hexaazatriphenylenes)

OSC.G 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (10 CITINGS)

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RE.CNT    15      THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT
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L50 ANSWER 4 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 143:213057 HCA Full-text

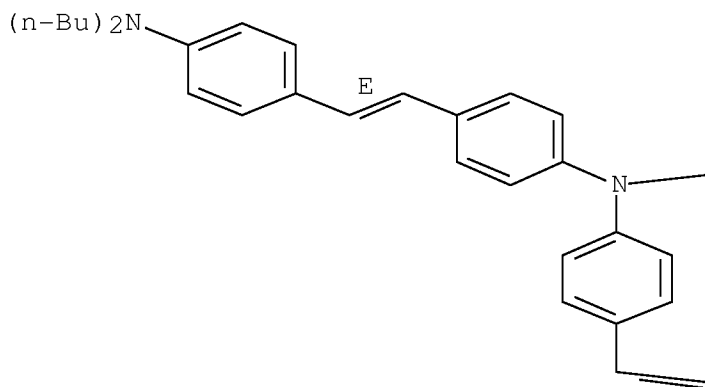
TI      Synthesis of Triphenylamine-Cored Dendritic Two-Photon Absorbing

Chromophores

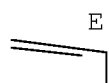
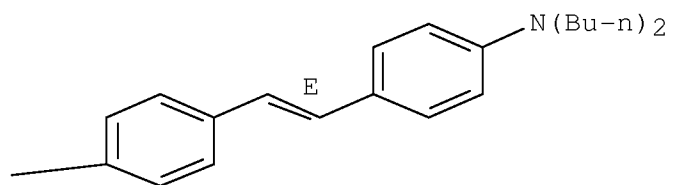
AU Wei, Peng; Bi, Xiangdong; Wu, Zhe; Xu, Zhi  
CS Department of Chemistry, University of Missouri-Kansas City, Kansas  
City, MO, 64110, USA  
SO Organic Letters (2005), 7(15), 3199-3202  
CODEN: ORLEF7; ISSN: 1523-7060  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 143:213057  
AB A series of dendritic two-photon absorbing chromophores contg.  
triphenylamine moiety as a core and(or) branching points and  
phenylenevinylene links have been synthesized through a convergent synthetic  
strategy. One-photon and two-photon optical properties of these mols. were  
characterized. In the nanosecond time domain, these mols. exhibited large  
two-photon absorption (TPA) cross sections up to  $7.56\text{--}12.2 \times 10^{-44} \text{ s cm}^4$  at  
800 nm, indicating that these mol. structures were viable candidates for  
various two-photon related applications.  
IT 862420-07-3P  
(synthesis and optical properties of triphenylamine-cored dendritic  
two-photon absorbing chromophores having phenylenevinylene links)  
RN 862420-07-3 HCA  
CN Benzenamine, 4-[(1E)-2-[4-[bis[4-[(1E)-2-[4-  
(dibutylamino)phenyl]ethenyl]phenyl]amino]phenyl]ethenyl]-N,N-bis[4-  
[(1E)-2-[4-[bis[4-[(1E)-2-[4-  
(dibutylamino)phenyl]ethenyl]phenyl]amino]phenyl]ethenyl]phenyl]- (CA  
INDEX NAME)

Double bond geometry as shown.

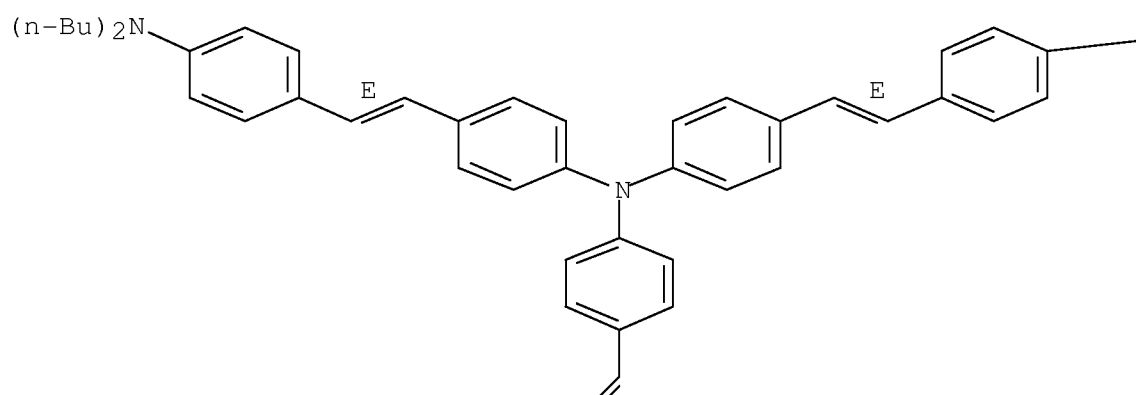
PAGE 1-A



PAGE 1-B

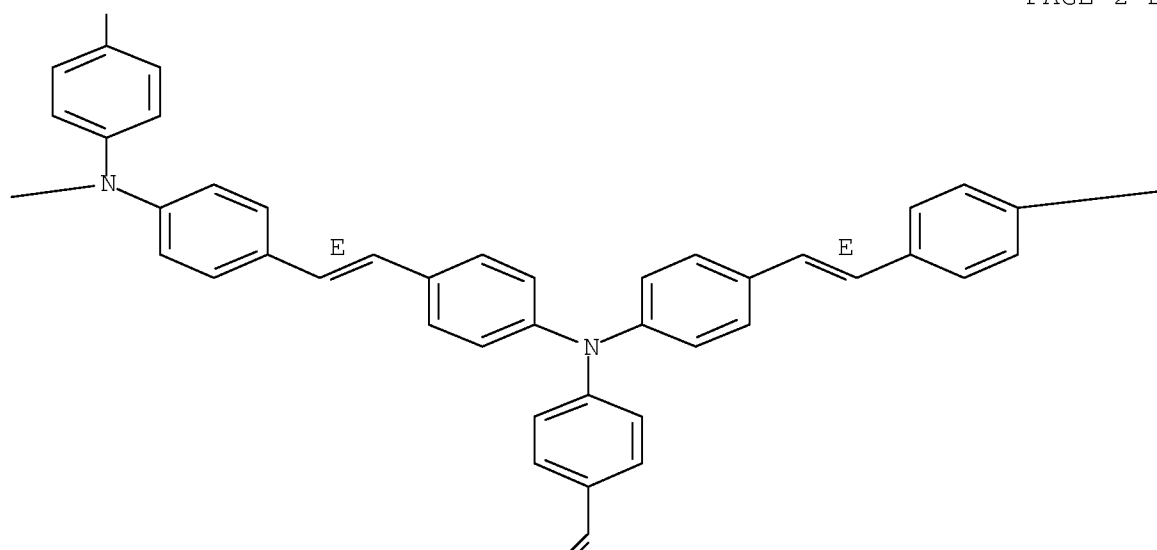


PAGE 2-A





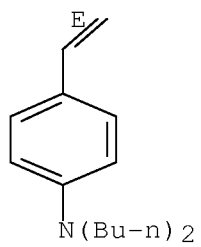
PAGE 2-B

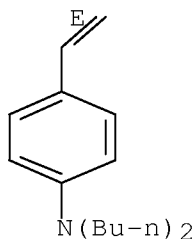


PAGE 2-C



PAGE 3-A





IT 862420-07-3P

(synthesis and optical properties of triphenylamine-cored dendritic two-photon absorbing chromophores having phenylenevinylene links)

OSC.G 47 THERE ARE 47 CAPLUS RECORDS THAT CITE THIS RECORD (47 CITINGS)

RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 5 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 143:183088 HCA Full-text

TI Electrophotographic photoreceptors with good abrasion and scratch resistance, process cartridges, and electrophotographic apparatus

IN Ogaki, Harunobu; Tanaka, Takakazu; Kako, Kenichi

PA Canon Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 50 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2005208111	A	20050804	JP 2004-11685	20040120
PRAI	JP 2004-11685		20040120		
OS	MARPAT 143:183088				

AB The photoreceptors have (A) charge generation layers contg. charge generation materials and specific arom. polyamine charge transport materials, and (B) charge transport layers contg. 90-100% specific arom. polyamine charge transport materials with mol. wt. 1500-4000 in this order on supports. The electrophotog. app. shows good printing durability.

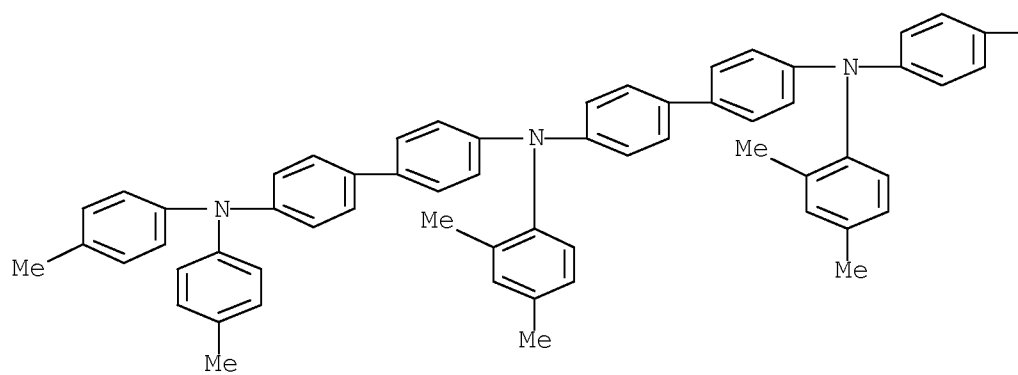
IT 861249-20-9

(electrophotog. photoreceptors contg. specific arom. polyamine charge transport materials in charge generation layers and charge transport layers)

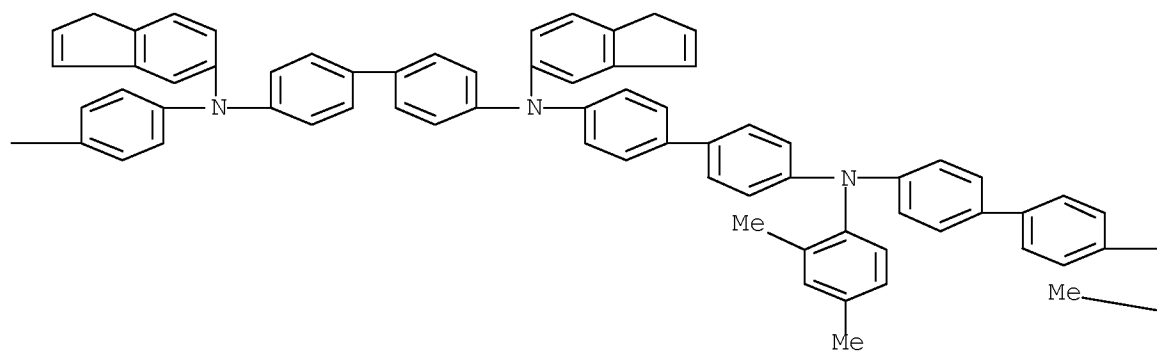
RN 861249-20-9 HCA

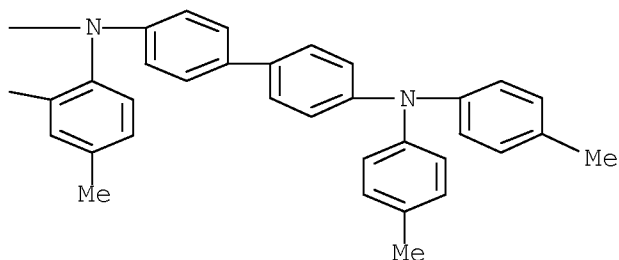
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[[4'-[[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](2,4-dimethylphenyl)amino][1,1'-biphenyl]-4-yl](2,4-dimethylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4'-di-1H-inden-5-yl-  
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B





IT 861249-20-9

(electrophotog. photoreceptors contg. specific arom. polyamine  
charge transport materials in charge generation layers and charge  
transport layers)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L50 ANSWER 6 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 143:86617 HCA Full-text

TI Purification of charge-transporting agent using continuous column  
chromatography, electrophotographic photoreceptor, process cartridge,  
and apparatus

IN Tanaka, Takakazu; Ogaki, Harunobu; Kako, Kenichi; Yoshida, Akira

PA Canon Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005162620	A	20050623	JP 2003-399888	20031128
PRAI	JP 2003-399888		20031128		

AB The charge-transporting agent is purified by continuous column chromatog.  
The charge-transporting agent may be  $R_1(NR_2Z_1)_nNR_3R_4$  ( $n = 5-9$ ;  $R_1-4 =$   
monovalent arom. hydrocarbyl or heterocycle;  $Z_1 =$  divalent arom.  
hydrocarbylene or heterocycle;  $R_2$ s and  $Z_1$ s may be different) with mol. wt.  
1500-4000. Electrophotog. photoreceptor using the purified charge-  
transporting agent, and process cartridge and app. using the photoreceptor  
are also claimed. The photoreceptor shows good stability and printing  
durability in repeated printing.

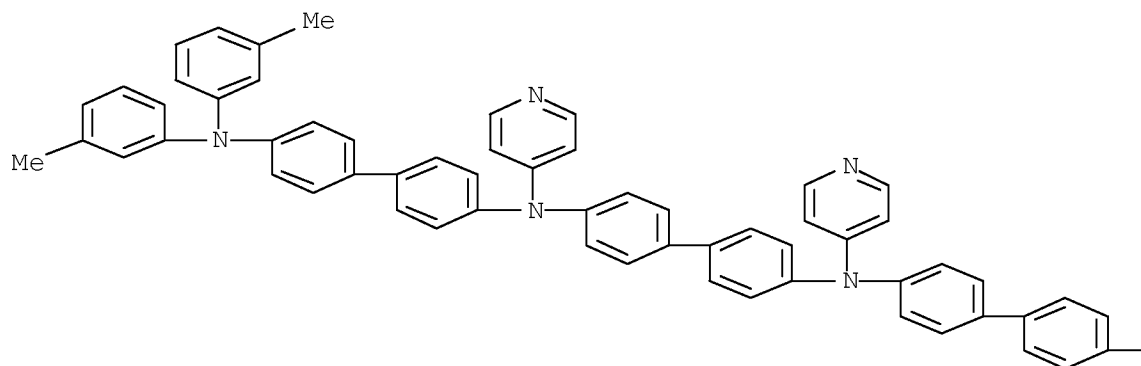
IT 855290-79-8P

(purifn. of polyamine charge-transporting agent using continuous column chromatog. for electrophotog. photoreceptor)

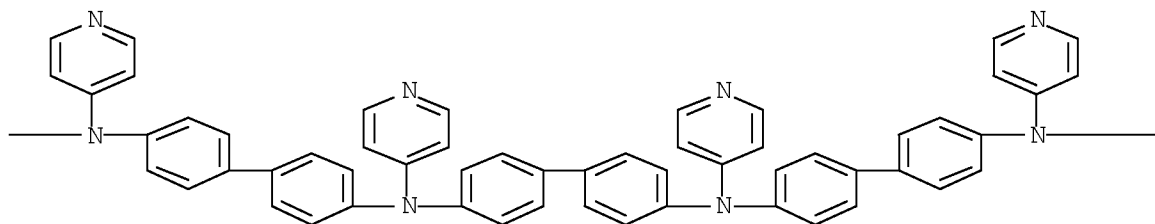
RN 855290-79-8 HCA

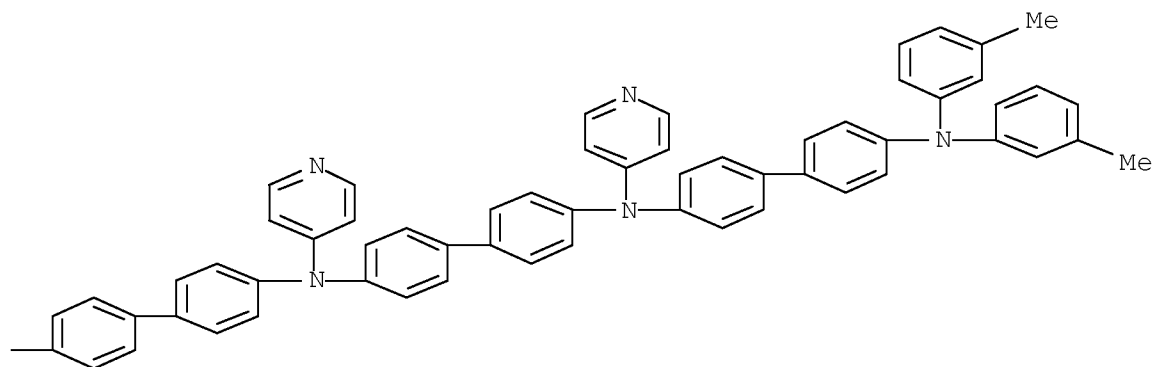
CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[[4'-[[4'-[[4'-[bis(3-methylphenyl)amino][1,1'-biphenyl]-4-yl]-4-pyridinylamino][1,1'-biphenyl]-4-yl]-4-pyridinylamino][1,1'-biphenyl]-4-yl]-4-pyridinylamino][1,1'-biphenyl]-4-yl]-N4,N4'-di-4-pyridinyl- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B





IT 855290-79-8P

(purifn. of polyamine charge-transporting agent using continuous column chromatog. for electrophotog. photoreceptor)

L50 ANSWER 7 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 142:306794 HCA [Full-text](#)

TI Combination of an Aromatic Core and Aromatic Side Chains Which Constitutes Discotic Liquid Crystal and Organogel Supramolecular Assemblies

AU Ishii, Tsutomu; Hirayama, Tomoyuki; Murakami, Koichi; Tashiro, Hiroshi; Thiemann, Thies; Kubo, Kanji; Mori, Akira; Yamasaki, Sumio; Akao, Tetsuyuki; Tsuboyama, Akira; Mukaide, Taihei; Ueno, Kazunori; Mataka, Shuntaro

CS Institute for Materials Chemistry and Engineering (IMCE), Kyushu University, Kasuga, 816-8580, Japan

SO Langmuir (2005), 21(4), 1261-1268  
CODEN: LANGD5; ISSN: 0743-7463

PB American Chemical Society

DT Journal

LA English

AB This paper reports unique and unusual formations of columnar liq. crystals and organogels by self-assembling discotic mols., which are composed of an arom. hexaazatriphenylene (HAT) core and six flexible arom. side chains. In HAT derivs. 3a, with 4'-(N,N-diphenylamino)biphenyl-4-yl chains, 3b, with 4'-[N-(2-naphthyl)-N-phenylamino]biphenyl-4-yl chains, and 3c, with 4'-phenoxybiphenyl-4-yl chains, the two-dimensional hexagonal packings can be created by their self-assembling in the liq. cryst. phase, which were characterized by polarizing optical microscopy, DSC, and x-ray diffraction anal. In certain solvents, HAT mols. 3a-c can form the viscoelastic fluid organogels, in which 1-dimensional aggregates composed of the HAT mols. are self-assembled and entangled into three-dimensional network structures. The organogel structures were analyzed by SEM observation, <sup>1</sup>H NMR, UV-visible, and CD spectroscopy. In contrast to 3a-c, none of the liq. cryst. and organogel phases could be formed from 3d and 3e with short arom. side chains including a phenylene spacer, and 3f (except a few specific solns.) and 3g

without terminal diarylamino and phenoxy groups. In 3a-c, the arom. side chains with terminal flexible groups make up soft regions that cooperatively stabilize the liq. cryst. and organogel supramol. structures together with the hard regions of the hexaazatriphenylene core.

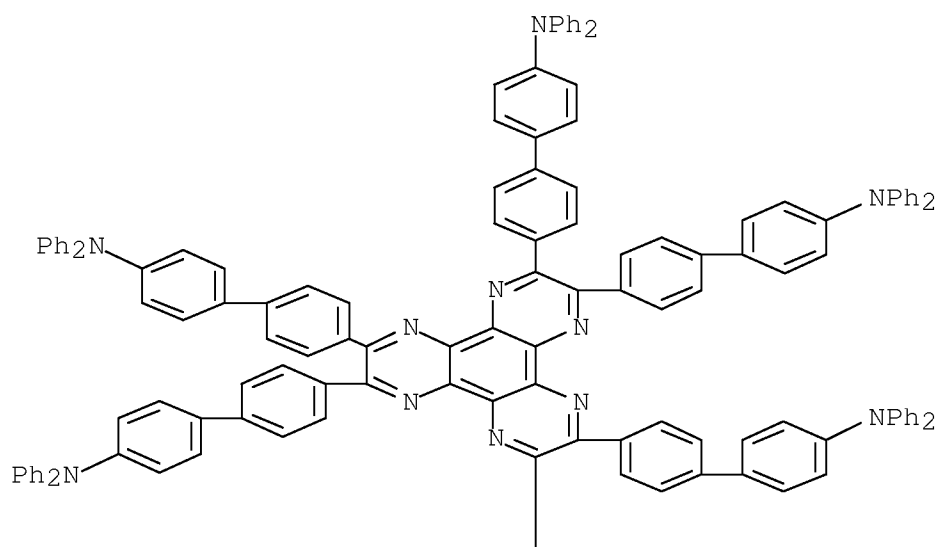
IT 847755-75-3P 847755-76-4P

(prepn., liq. crystal properties and supramol. assemblies in formation of organogels from)

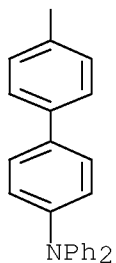
RN 847755-75-3 HCA

CN [1,1'-Biphenyl]-4-amine,  
4',4''',4''''',4''''''',4''''''''',4''''''''''',4'''''''''''''-dipyrazino[2,3-f:2',3'-  
h]quinoxaline-2,3,6,7,10,11-hexaylhexas[N,N-diphenyl- (9CI) (CA  
INDEX NAME)

PAGE 1-A



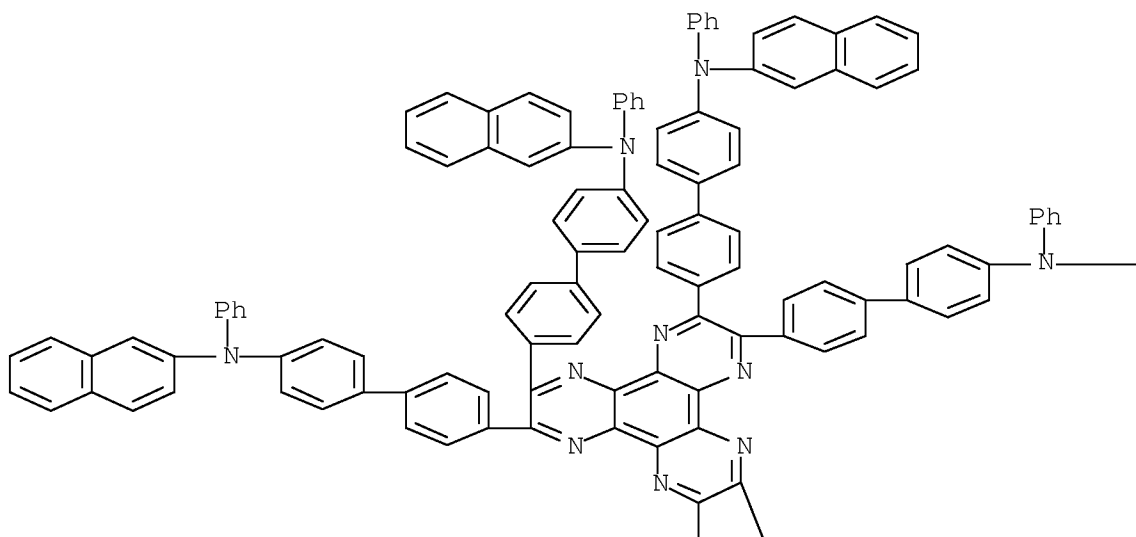
PAGE 2-A



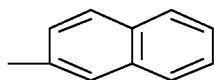
RN 847755-76-4 HCA

CN 2-Naphthalenamine, N,N',N'',N''',N'''',N''''',N''''''-[dipyrazino[2,3-f:2',3'-h]quinoxaline-2,3,6,7,10,11-hexaylhexakis([1,1'-biphenyl]-4',4-diyl)]hexakis[N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

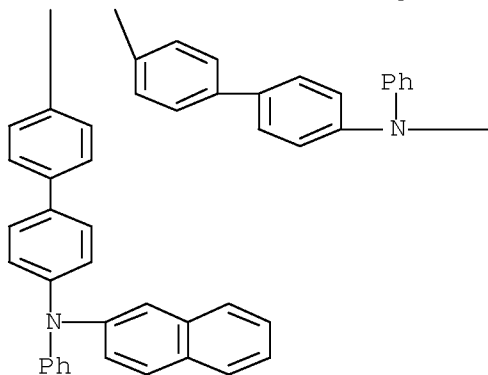


PAGE 1-B

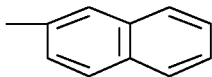




PAGE 2-A



PAGE 2-B



IT 847755-75-3P 847755-76-4P

(prepn., liq. crystal properties and supramol. assemblies in formation of organogels from)

OSC.G 41 THERE ARE 41 CAPLUS RECORDS THAT CITE THIS RECORD (43 CITINGS)

RE.CNT 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 8 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 138:229184 HCA Full-text

TI Heat-developable photographic film with improved silver tone

IN Hanyu, Takeshi

PA Konica Co., Japan

SO Jpn. Kokai Tokkyo Koho, 25 pp.

CODEN: JKXXAF

DT Patent

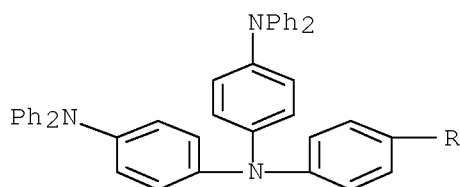
LA Japanese

FAN.CNT 1

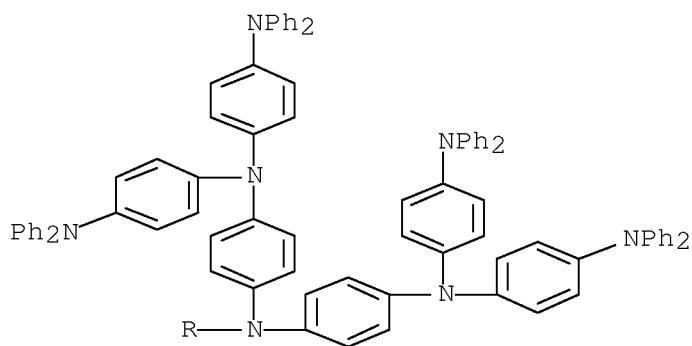
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003075955	A	20030312	JP 2001-265695	20010903
PRAI	JP 2001-265695		20010903		

OS MARPAT 138:229184  
 AB The material comprising a support coated with an image-forming layer contg. photosensitive Ag halide, an org. Ag salt, a reducing agent, a binder, and a star-burst mol. compd.  $A_1B_1n_1B_2n_2B_3n_3\cdots B_n n_n$  ( $A_1$ ,  $B_1-n$  = 3- to 6-valent atom or atoms to form a ring;  $n_1 = 3-6$ ;  $n_2-n = 2-6$ ). The material shows high sensitivity, low fog, improved Ag tone, and scratch resistance.  
 IT 501015-68-5 501015-70-9  
 (heat-developable photog. film contg. star-burst mol. compd.)  
 RN 501015-68-5 HCA  
 CN 1,4-Benzenediamine, N1,N1-bis[4-[bis[4-(diphenylamino)phenyl]amino]phenyl]-N4,N4-bis[4-(diphenylamino)phenyl]-  
 (CA INDEX NAME)

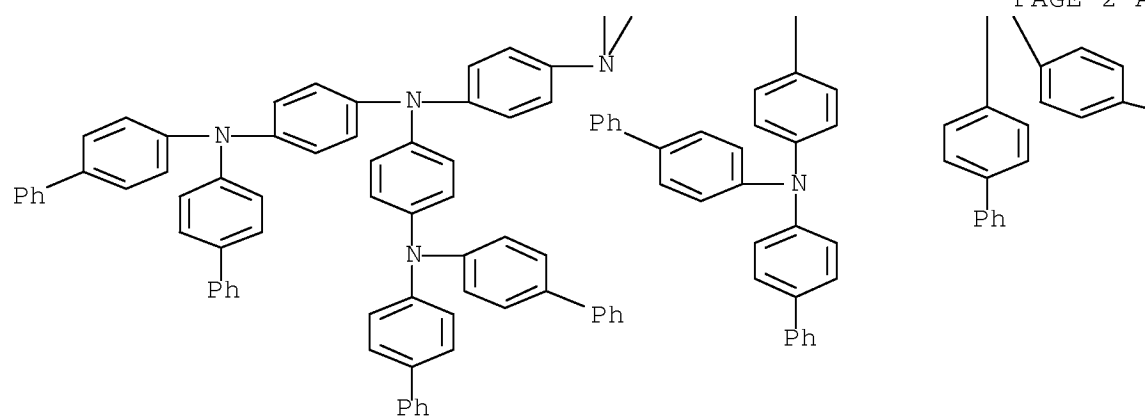
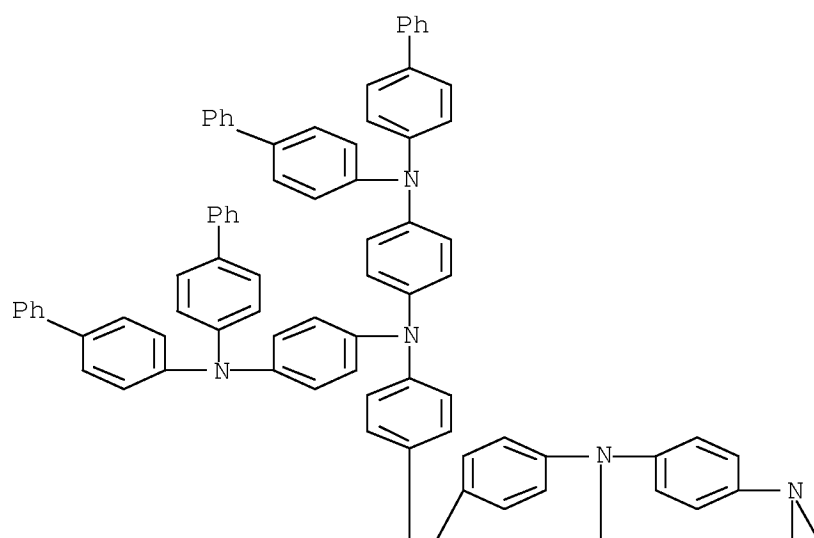
PAGE 1-A



PAGE 2-A



RN 501015-70-9 HCA  
 CN 1,4-Benzenediamine, N,N-bis[4-[bis([1,1'-biphenyl]-4-yl)amino]phenyl]-N',N'-bis[4-[bis[4-[bis([1,1'-biphenyl]-4-yl)amino]phenyl]amino]phenyl]- (9CI) (CA INDEX NAME)



IT 501015-68-5 501015-70-9

(heat-developable photog. film contg. star-burst mol. compd.)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L50 ANSWER 9 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 136:118797 HCA Full-text

TI Controlled Cyclotrimerization in Hyperbranched Polymer Synthesis

AU Higuchi, Masayoshi; Kanazawa, Hirohiko; Tsuruta, Masanori; Yamamoto, Kimihisa

CS Department of Chemistry Faculty of Science Technology, Keio University, Yokohama, 223-8522, Japan

SO Macromolecules (2001), 34(26), 8847-8850  
CODEN: MAMOBX; ISSN: 0024-9297

PB American Chemical Society

DT Journal

LA English

AB Cyclization in hyperbranched polymer synthesis was first controlled on the basis of a steric effect using a Lewis acid with a bulky ligand. Only phenylazomethine oligomers having a cyclic structure were formed during the polymn. of 4,4'-diaminobenzophenone in the presence of TiCl<sub>4</sub>(THF)<sub>2</sub> as a Lewis acid with bulky ligands. The structure of a cavity in an isolated cyclic oligomer was detd. by X-ray crystal anal. Controlled cyclization is applied for hyperbranched polymer synthesis, and a novel dendrimer with a cyclic structure was quant. obtained via controlled cyclization on the basis of a steric effect using a monomer with a bulky dendron.

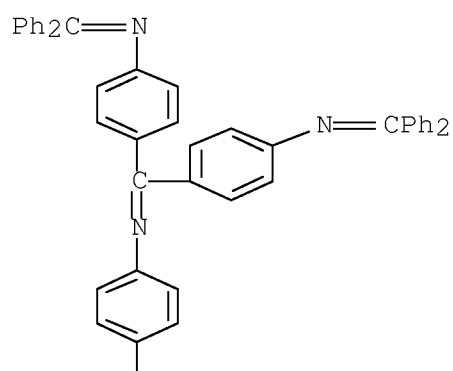
IT ~~391593-64-9P~~

(in controlled cyclotrimerization for hyperbranched polymer synthesis)

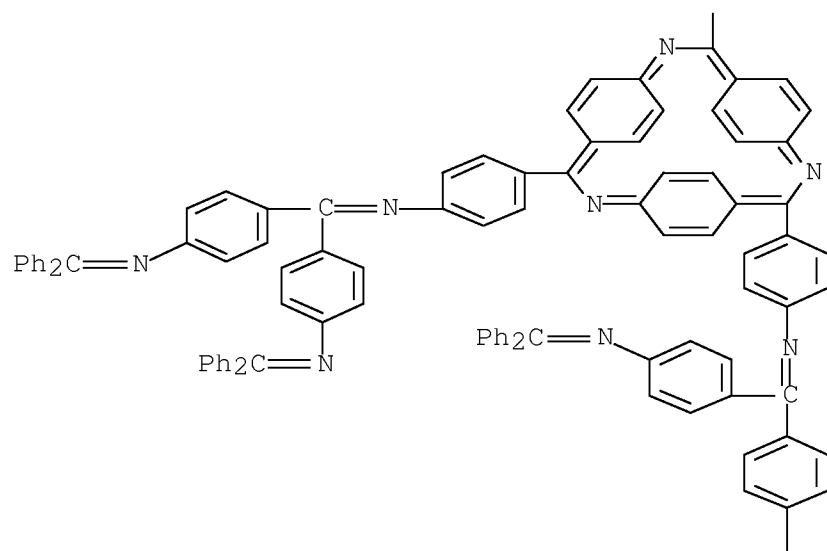
RN 391593-64-9 HCA

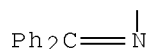
CN Benzenamine, 4,4',4''-(2,8,14-triazatetracyclo[14.2.2.24,7.210,13]tetracos-2,4,6,8,10,12,14,16,18,19,21,23-dodecaene-3,9,15-triyl)tris[N-[bis[4-[(diphenylmethylene)amino]phenyl]methylene]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A





IT 391593-64-9P

(in controlled cyclotrimerization for hyperbranched polymer synthesis)

OSC.G 20 THERE ARE 20 CAPLUS RECORDS THAT CITE THIS RECORD (20 CITINGS)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 10 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 132:347976 HCA Full-text

TI Palladium-catalyzed synthesis of triarylamine macromolecules

AU Hartwig, John F.

CS Department of Chemistry, New Haven, CT, 06520-8107, USA

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2000), 41(1), 420-421

CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

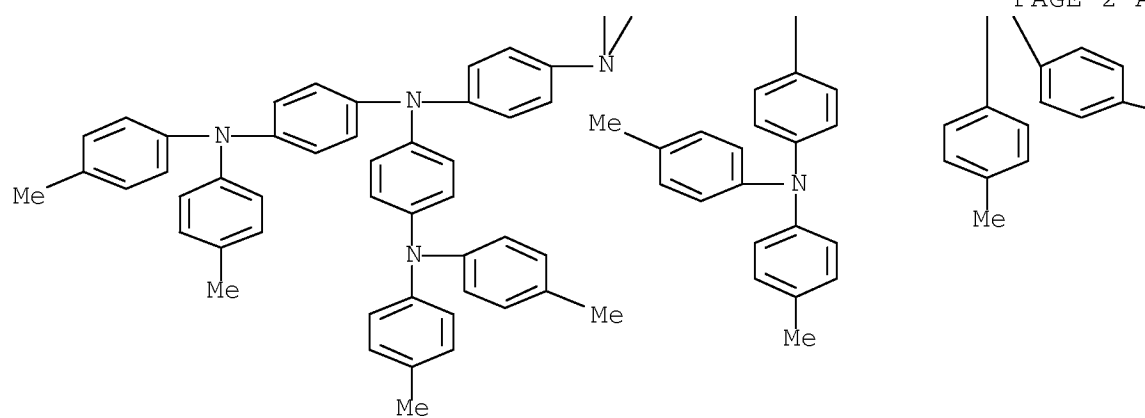
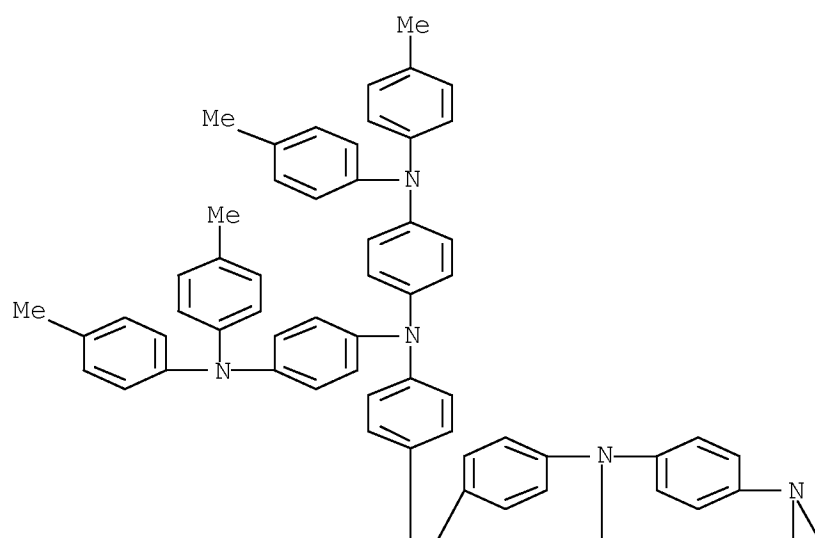
AB In general, the palladium-catalyzed amination methodol. could be applied to prep. a wide variety of arylamines, but the formation of clean polymeric triarylamines required the proper choice of ligand. Phosphine-free polymer could be prepd. by using tri-tert-Bu phosphine or tris(trimethoxymethylphenyl) phosphine. Careful selection of reaction conditions and protective groups led to the formation of clean dendrimeric and linear oligomers contg. only triarylamine linkages. Reactions of simple dibromoarenes and phenylenediamines readily formed macrocyclic structures.

IT 198026-07-2P

(prepn. of triarylamine macromols. with palladium catalysts)

RN 198026-07-2 HCA

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis[4-[bis(4-methylphenyl)amino]phenyl]amino]phenyl]-N4,N4-bis[4-[bis(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)


C

IT 198026-07-2P

(prepn. of triarylamine macromols. with palladium catalysts)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 11 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 131:19388 HCA Full-text

TI The synthesis of triarylamine macromolecules by palladium-catalyzed amination of aryl halides

AU Hartwig, John F.; Goodson, Felix E.; Louie, Janis; Hauck, Sheila

CS Department of Chemistry, New Haven, CT, 06520-8107, USA

SO Polymeric Materials Science and Engineering (1999), 80, 41-42

CODEN: PMSEDG; ISSN: 0743-0515

PB American Chemical Society

DT Journal

LA English

AB Phosphite-free polymer was prepd. by using tri-tert-butylphosphine or tris(trimethoxymethylphenyl)phosphine. Careful selection of reaction conditions and protective groups led to the formation of clean dendritic and linear oligomers contg. only triarylamine linkages.

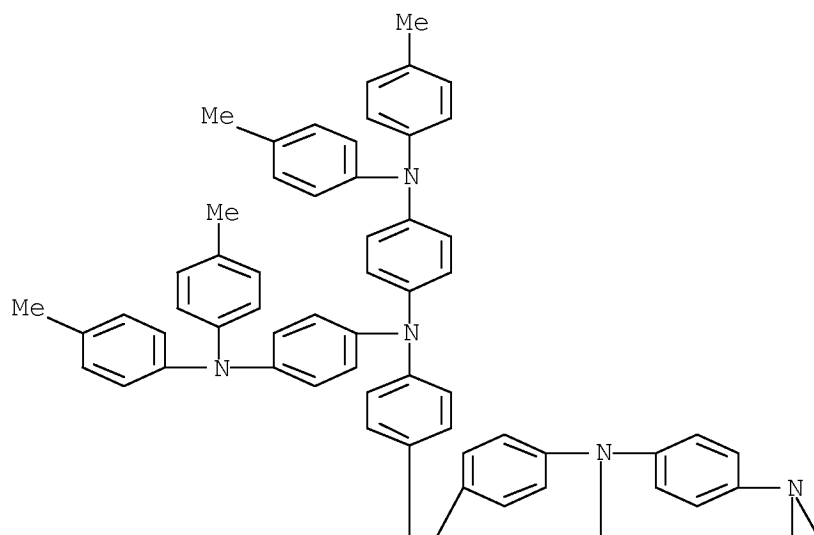
IT 198026-07-2P

(dendrimer; the synthesis of triarylamine macromols. by  
palladium-catalyzed amination of aryl halides)

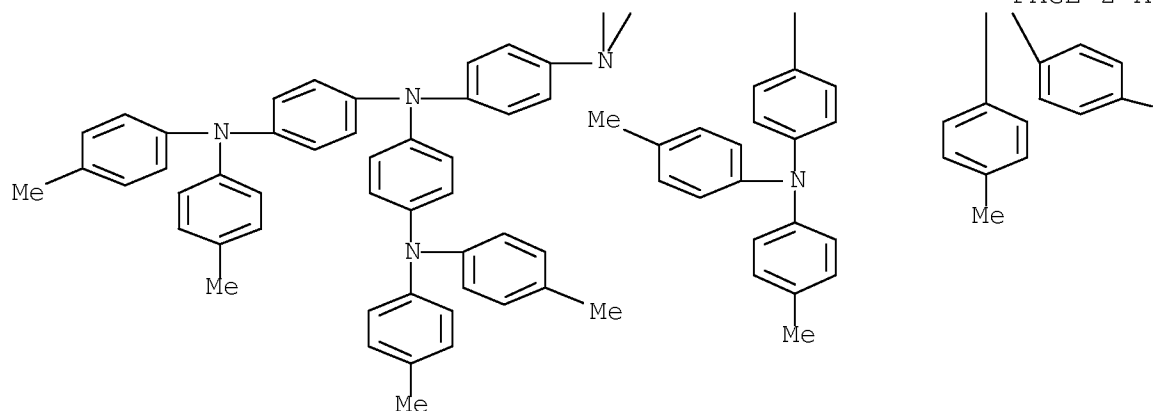
RN 198026-07-2 HCA

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis[4-[bis(4-methylphenyl)amino]phenyl]amino]phenyl]-N4,N4-bis[4-[bis(4-methylphenyl)amino]phenyl]- (CA INDEX NAME)

PAGE 1-A







PAGE 2-B

Me

IT 198026-07-2P

(dendrimer; the synthesis of triarylamine macromols. by  
palladium-catalyzed amination of aryl halides)

OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 12 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 128:173587 HCA Full-text

OREF 128:34101a,34104a

TI A novel class of  $\pi$ -electron dendrimers for thermally and  
morphologically stable amorphous molecular materials

AU Katsuma, Katsuhiko; Shirota, Yasuhiko

CS Department Applied Chemistry, Faculty Engineering, Osaka University,  
Suita, 565, Japan

SO Advanced Materials (Weinheim, Germany) (1998), 10(3),  
223-226

CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

AB The novel org. hyperbranched  $\pi$ -electron systems, 1,3,5-tris[N-(4'-methylbiphenyl-4-yl)-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(a)) and 1,3,5-tris{N-[4-bis(4-methylphenyl)aminophenyl]-N-(4-diphenylaminophenyl)amino}benzene (TDAB-G1(b)), were synthesized via the Ullmann reaction and characterized by  $^1\text{H}$ -,  $^{13}\text{C}$ -NMR, electron absorption spectroscopy, and elemental anal. TDAB-G1(a) was obtained as a polycryst. material, whereas TDAB-G1(b) was an amorphous glass. DSC anal. of TDAB-G1(a) gave a m.p. of  $187^\circ$ . When the melted sample was cooled in air, a glass was formed spontaneously. Reheating of the glass sample resulted in a glass transition at  $T_g = 128^\circ$  giving a supercooled liq. Likewise, the amorphous repptd. sample of TDAB-G1(b) exhibited a glass transition at  $T_g = 134^\circ$  when heated. Unique multiredox processes involving as many as 6- and 9-electron reversible oxidns. were obsd. in the cyclic voltammograms of TDAB-G1(a) and TDAB-G1(b), resp. TDAB-G1(b) was used as a hole-transport material in a multilayer org. LED consisting of the double-hole transport layer and an emitting layer which contained N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine (TPD) doped with rubrene as the emitting material and with tris(8-quinolinolato) Al as the electron transport material. This device emitted yellow light and the electroluminescence showed a peak at 560 nm in agreement with the luminescence peak of rubrene.

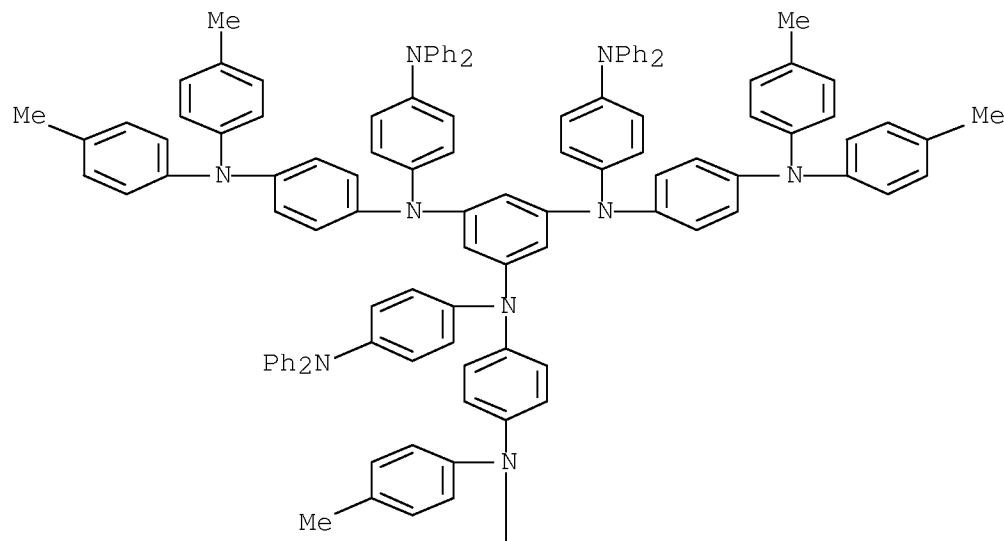
IT 874946-05-1P

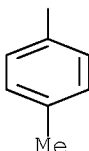
(A novel class of  $\pi$ -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

RN 874946-05-1 HCA

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-[bis(4-methylphenyl)amino]phenyl]-N1,N3,N5-tris[4-(diphenylamino)phenyl]-  
(CA INDEX NAME)

PAGE 1-A





IT 874946--05-1P

(A novel class of  $\pi$ -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

OSC.G 113 THERE ARE 113 CAPLUS RECORDS THAT CITE THIS RECORD (113 CITINGS)

L50 ANSWER 13 OF 13 HCA COPYRIGHT 2010 ACS on STN

AN 127:331861 HCA Full-text

OREF 127:65185a,65188a

TI Discrete High Molecular Weight Triarylamine Dendrimers Prepared by Palladium-Catalyzed Amination

AU Louie, Janis; Hartwig, John F.; Fry, Albert J.

CS Department of Chemistry, Yale University, New Haven, CT, 06520-8107, USA

SO Journal of the American Chemical Society (1997), 119(48), 11695-11696

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

OS CASREACT 127:331861

AB Electronically interesting triarylamine dendrimers previously prepd. in modest yields were synthesized in high yields. The first generation dendrimer 4,4',4''-tris(N,N-diphenylamino)triphenylamine (TDATA) was prepd. from tris(4-bromophenyl)amine and 3.3 equiv of lithium diphenylamide in the presence of 2 mol % Pd[P(o-tolyl)3]2. The high-yield formation of triarylamine by palladium-catalyzed chem. was used to produce high mol. wt. arylamines with high glass transition temps., low redox potentials, and the ability to produce delocalized radical cations.

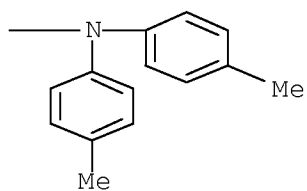
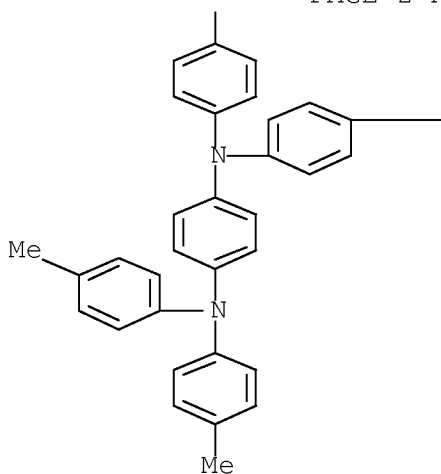
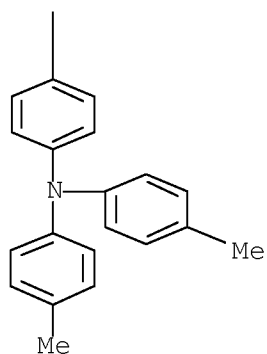
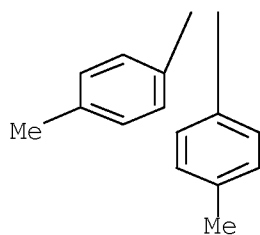
IT 198026-08-3P

(palladium-catalyzed amination synthesis of discrete high mol. wt. triarylamine dendrimers and their oxidn. properties)

RN 198026-08-3 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4,N4',N4'-tetrakis[4-[bis[4-[bis(4-methylphenyl)amino]phenyl]amino]phenyl]- (CA INDEX NAME)



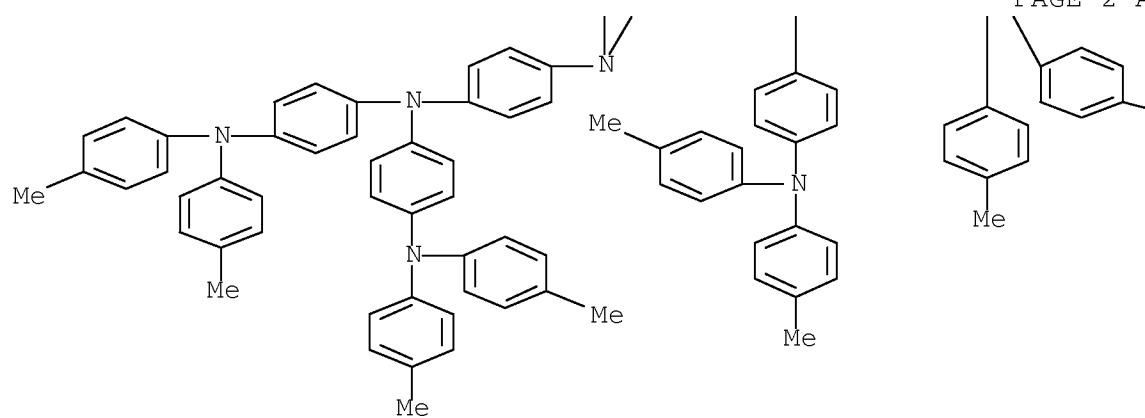
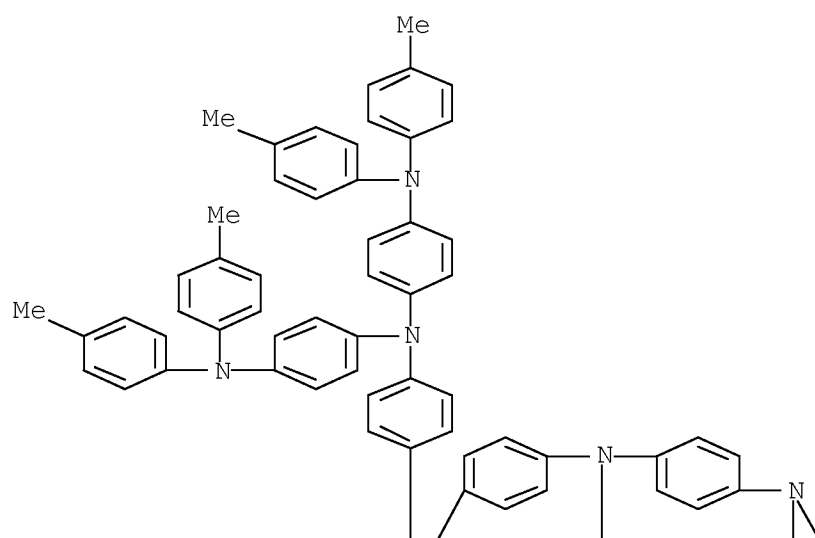


IT 198026-07-2P

(second generation dendrimer; palladium-catalyzed amination  
synthesis of discrete high mol. wt. triarylamine dendrimers and  
their oxidn. properties)

RN 198026-07-2 HCA

CN 1,4-Benzenediamine, N1,N1-bis[4-[bis[4-[bis(4-  
methylphenyl)amino]phenyl]amino]phenyl]-N4,N4-bis[4-[bis(4-  
methylphenyl)amino]phenyl]- (CA INDEX NAME)


C

IT 198026-08-3P  
 (palladium-catalyzed amination synthesis of discrete high mol. wt. triarylamine dendrimers and their oxidn. properties)  
 IT 198026-07-2P  
 (second generation dendrimer; palladium-catalyzed amination synthesis of discrete high mol. wt. triarylamine dendrimers and their oxidn. properties)  
 OSC.G 133 THERE ARE 133 CAPLUS RECORDS THAT CITE THIS RECORD (133 CITINGS)

=> D L62 1-2 BIB ABS HITSTR HITIND

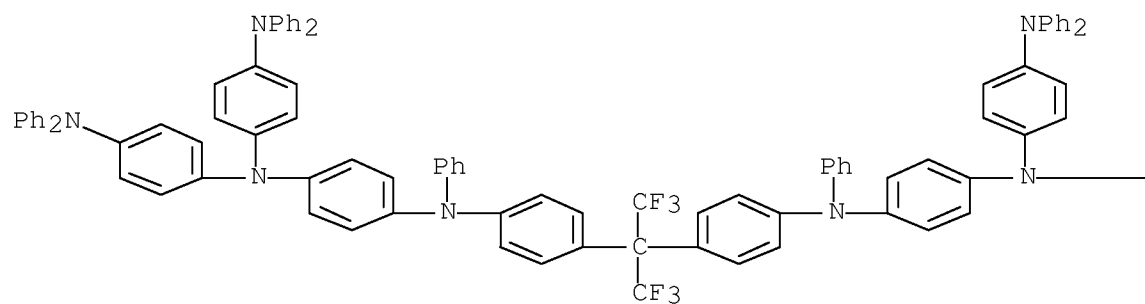
L62 ANSWER 1 OF 2 HCA COPYRIGHT 2010 ACS on STN  
 AN 147:154181 HCA Full-text  
 TI Compounds useful as hole transporter for electronic devices  
 IN Radu, Nora Sabina; Johansson, Gary A.; Herron, Norman; Gehret, Troy C.  
 PA E. I. du Pont de Nemours and Company, USA  
 SO PCT Int. Appl., 46 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	WO 2007079101	A2	20070712	WO 2006-US49336	20061227
	WO 2007079101	A3	20071108		
	US 20070232782	A1	20071004	US 2006-643293	20061221
	EP 1976822	A2	20081008	EP 2006-848199	20061227
	JP 2009522273	T	20090611	JP 2008-548698	20061227
	KR 2008084848	A	20080919	KR 2008-718524	20080728
PRAI	US 2005-754976P	P	20051229		
	WO 2006-US49336	W	20061227		

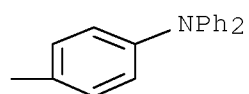
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 147:154181  
 AB The present invention relates to novel compds. and polymers, compns. comprising novel compds. or polymers, and electronic devices comprising at least one layer contg. the compd. or polymer.  
 IT 943768-02-3P  
 (compds. useful as hole transporter for electronic devices)  
 RN 943768-02-3 HCA  
 CN 1,4-Benzenediamine, N1,N1'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]di-4,1-phenylene]bis[N4,N4-bis[4-(diphenylamino)phenyl]-N1-phenyl- (CA INDEX NAME)

PAGE 1-A

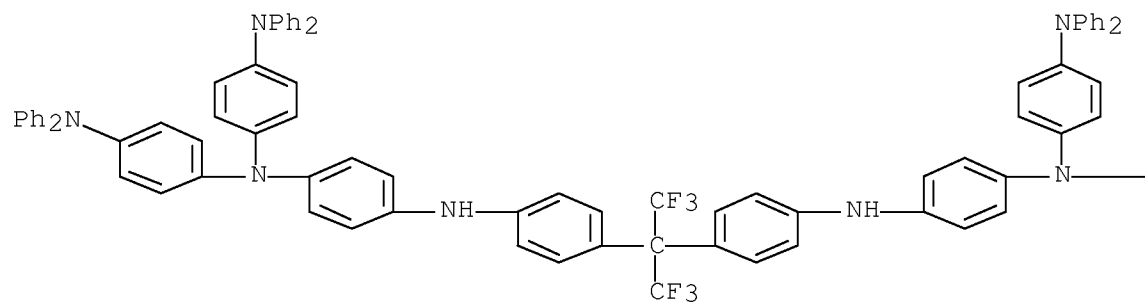


PAGE 1-B

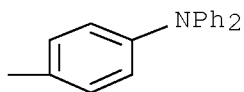


IT 943768-01-2P 943768-03-4P  
 (prepn. of compds. useful as hole transporter for electronic devices)  
 RN 943768-01-2 HCA  
 CN 1,4-Benzenediamine, N1,N1'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]di-4,1-phenylene]bis[N4,N4-bis[4-(diphenylamino)phenyl]- (CA INDEX NAME)

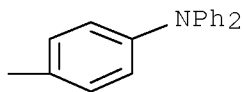
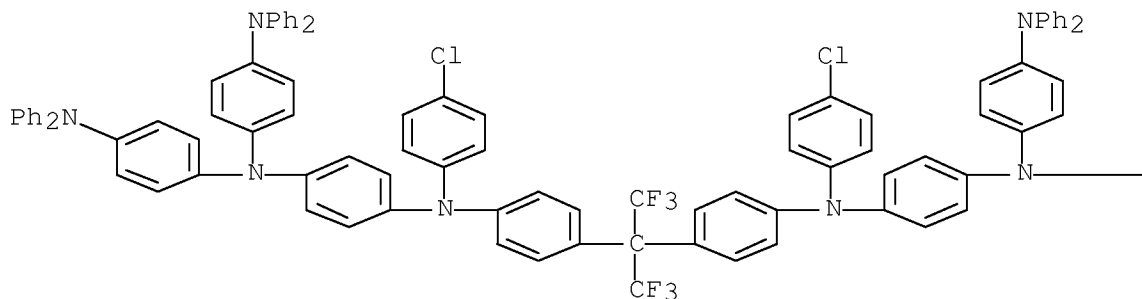
PAGE 1-A







RN 943768-03-4 HCA  
 CN 1,4-Benzenediamine, N1,N1'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]di-4,1-phenylene]bis[N1-(4-chlorophenyl)-N4,N4-bis[4-(diphenylamino)phenyl]- (CA INDEX NAME)



IPCI C07C0211-54 [I,A]; C07C0211-00 [I,C]; C07C0211-54 [I,A]; C08G0073-00 [I,C]; C08G0073-02 [I,A]; H01B0001-12 [I,C]; H01B0001-12 [I,A]  
 IPCR C07C0211-00 [I,C]; C07C0211-54 [I,A]; C08G0073-00 [I,C]; C08G0073-02 [I,A]; H01B0001-12 [I,C]; H01B0001-12 [I,A]  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 ST hole transporter **electroluminescent** display  
 IT **Electroluminescent** devices  
 (displays; compds. useful as hole transporter for electronic

devices)  
 IT Luminescent screens  
     (electroluminescent; compds. useful as hole transporter  
     for electronic devices)  
 IT 943768-02-3P  
     (compds. useful as hole transporter for electronic devices)  
 IT 123173-98-8P 943768-01-2P 943768-03-4P  
     (prepn. of compds. useful as hole transporter for electronic  
     devices)

L62 ANSWER 2 OF 2 HCA COPYRIGHT 2010 ACS on STN

AN 126:164231 HCA Full-text

OREF 126:31619a,31622a

TI Hole-transporting material and organic electroluminescent  
 device and electrophotographic photoreceptor using it

IN Tamano, Michiko; Onikubo, Shunichi; Enokida, Toshio

PA Toyo Ink Mfg Co, Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.

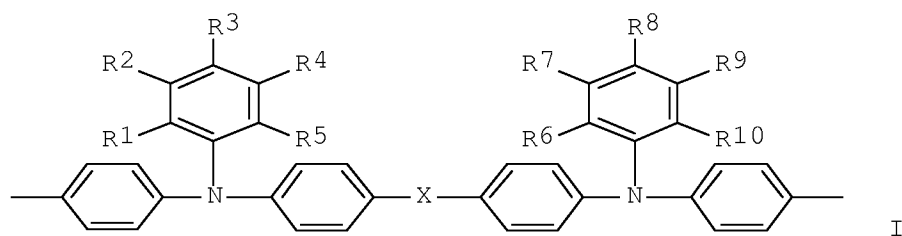
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 08314169	A	19961129	JP 1995-121026	19950519
	JP 3640090	B2	20050420		
PRAI	JP 1995-121026		19950519		
GI					



AB The title material has the general formula HA(BA)nBAH [A = diamine deriv.  
 residue I; R1-10 = H, halo, (substituted) alkyl, (substituted) alkoxy,  
 (substituted) thioalkoxy, CN, (mono- or di-substituted) amino, OH, SH,  
 (substituted) aryloxy, (substituted) arylthio, (substituted) arom. ring,  
 (substituted) heterocyclic ring (these adjacent substituents may form  
 aliph., arom. or heterocyclic rings which may be substituted); X = O, S,  
 Se; B = linking group CYZ; Y, Z = H, halo, (substituted) alkyl,  
 (substituted) arom. ring, (substituted) heterocyclic ring, Y and Z may form  
 an aliph., arom. or heterocyclic ring which may be substituted; n = 1-5000].

The electroluminescent device, comprising  $\geq 1$  org. compd. thin film-made luminescent layers sandwiched between a pair of electrodes, contains the material in  $\geq 1$  of the layers. The photoreceptor contains a charge-generating material and the pos. hole-transporting material on a conductive support. The electroluminescent device shows high luminescent efficiency, brightness, and durability and the photoreceptor gives clear images in repeated use.

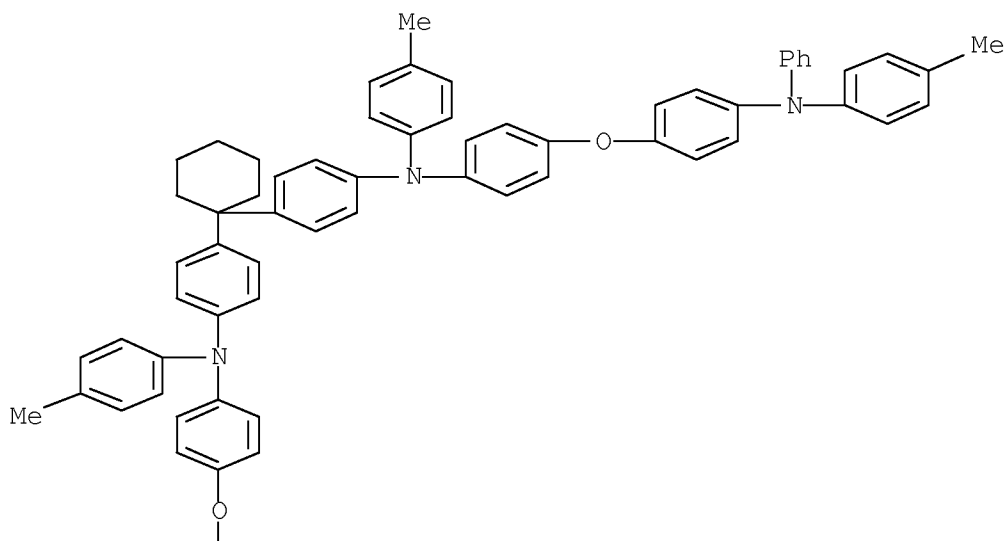
IT 186672-00-4 186672-07-1 186672-09-3  
186672-10-6

(electrophotog. photoreceptor and electroluminescent  
device contg. arom. polyamine hole-transporting material)

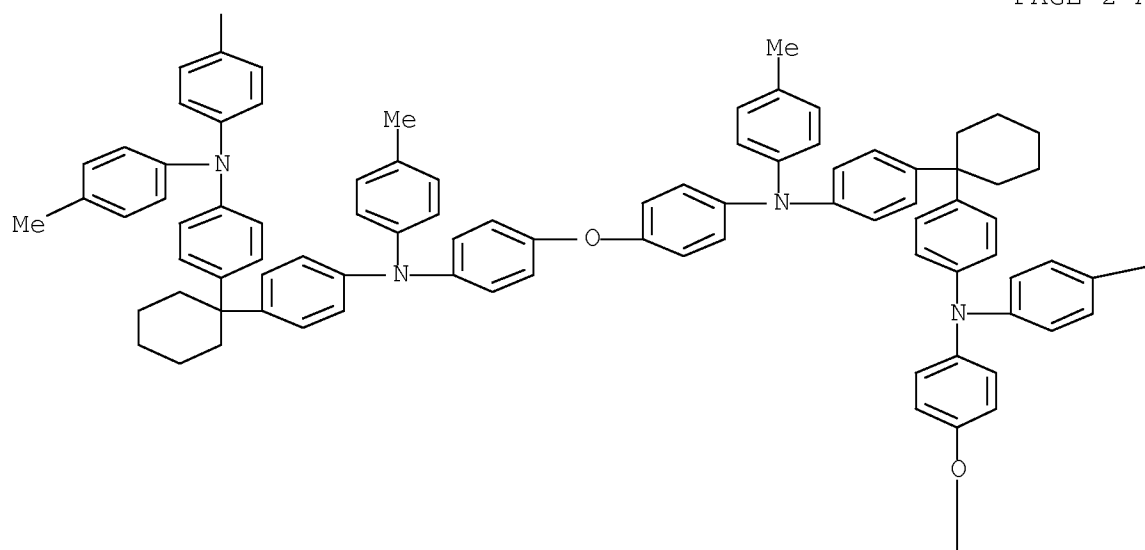
RN 186672-00-4 HCA

CN Benzenamine, 4,4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)[4-[4-[(4-methylphenyl)phenylamino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



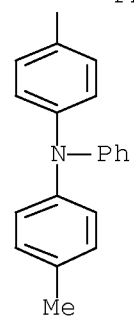
PAGE 2-A



PAGE 2-B

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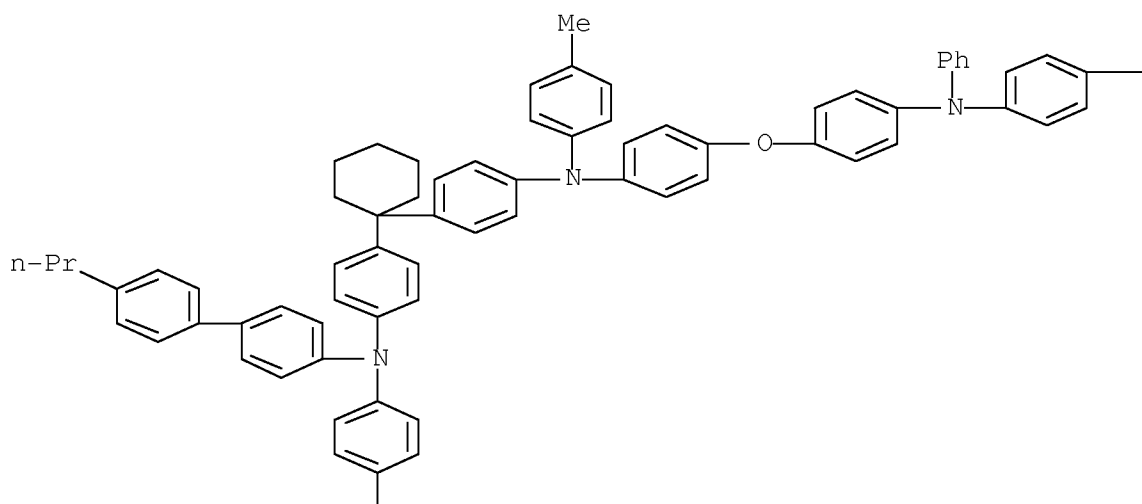
PAGE 3-A



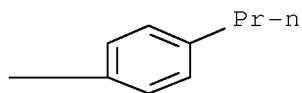
RN 186672-07-1 HCA

CN [1,1'-Biphenyl]-4-amine, N-[4-[4-[(4-methylphenyl)[4-[1-[4-[[4-[4-[(4-methylphenyl)[4-[1-[4-[[4-[4-[(4-methylphenyl)phenylamino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl](4'-propyl[1,1'-biphenyl]-4-yl)amino]phenyl]cyclohexyl]phenyl]amino]phenoxy]phenyl]-N-[4-[1-[4-[(4-methylphenyl)[4-[4-[phenyl(4'-propyl[1,1'-biphenyl]-4-yl)amino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl]-4'-propyl-(9CI) (CA INDEX NAME)

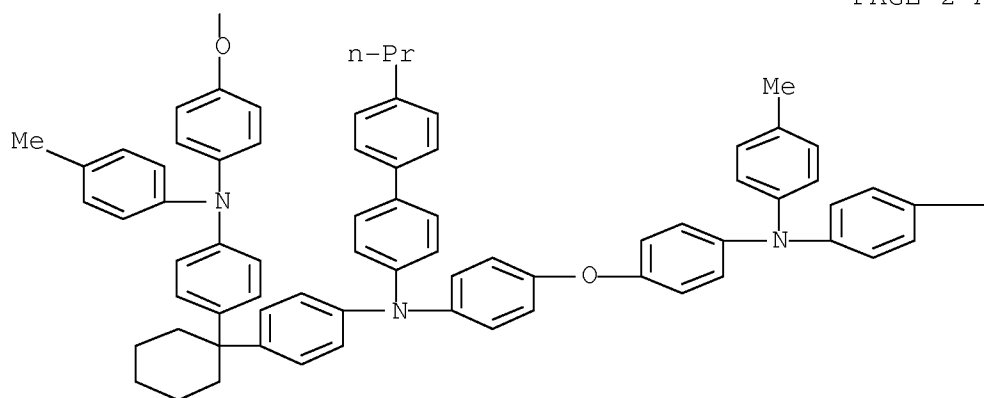
PAGE 1-A



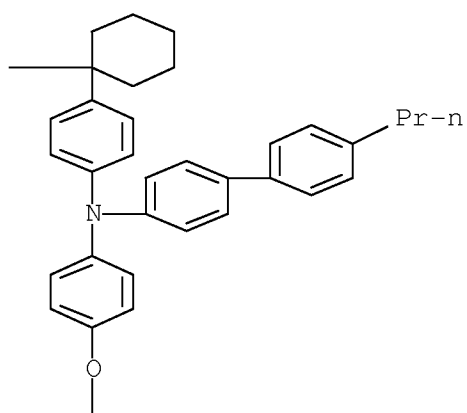
PAGE 1-B



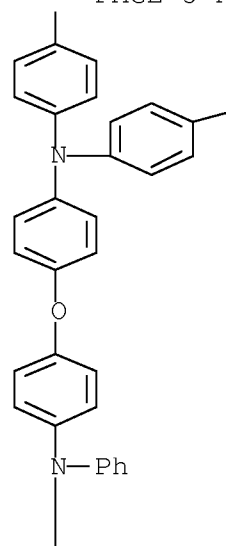
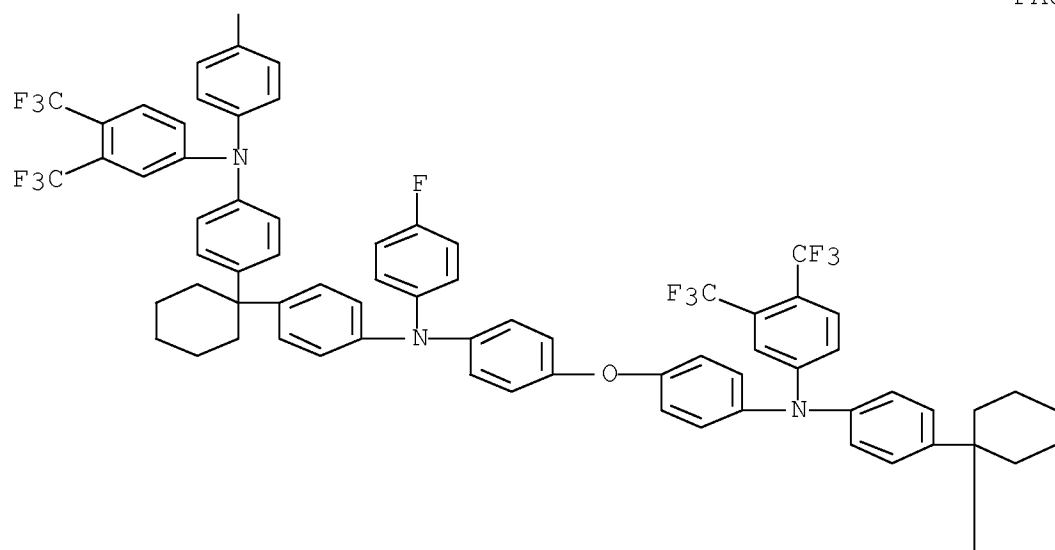
PAGE 2-A



PAGE 2-B

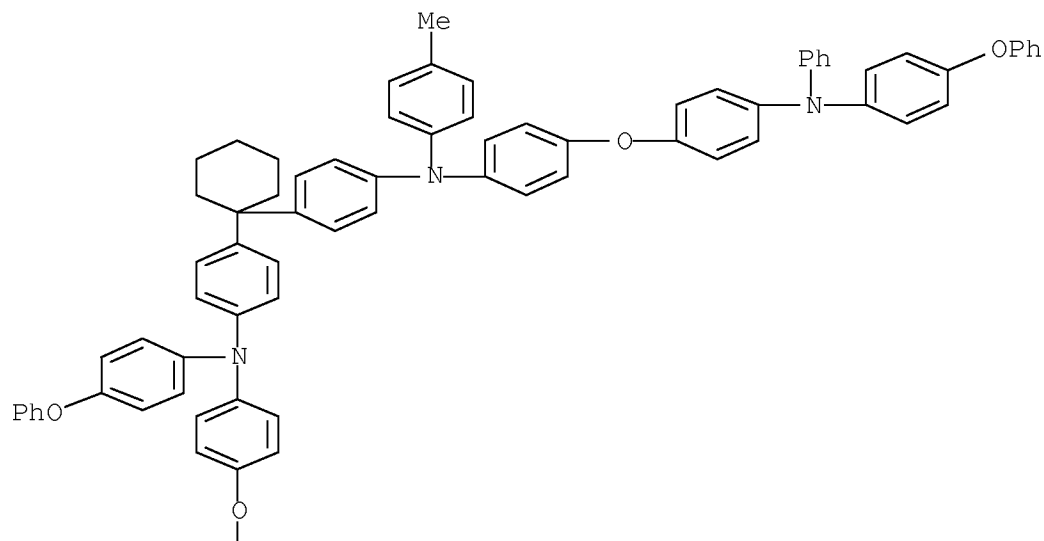


RN	186672-09-3	HCA
CN	Benzenamine, N-[4-[4-[4-[1-[4-[4-[4-[1-[4-[3,4-bis(trifluoromethyl)phenyl][4-[4-(4-fluorophenyl)phenylamino]phenoxy]phenyl]amino]phenyl]cyclohexyl]phenyl](4-fluorophenyl)amino]phenoxy]phenyl][3,4-bis(trifluoromethyl)phenyl]amino]phenyl]cyclohexyl]phenyl](4-fluorophenyl)amino]phenoxy]phenyl]-N-[4-[1-[4-[4-[4-[3,4-bis(trifluoromethyl)phenyl]phenylamino]phenoxy]phenyl](4-fluorophenyl)amino]phenyl]cyclohexyl]phenyl]-3,4-bis(trifluoromethyl)-(9CI) (CA INDEX NAME)	

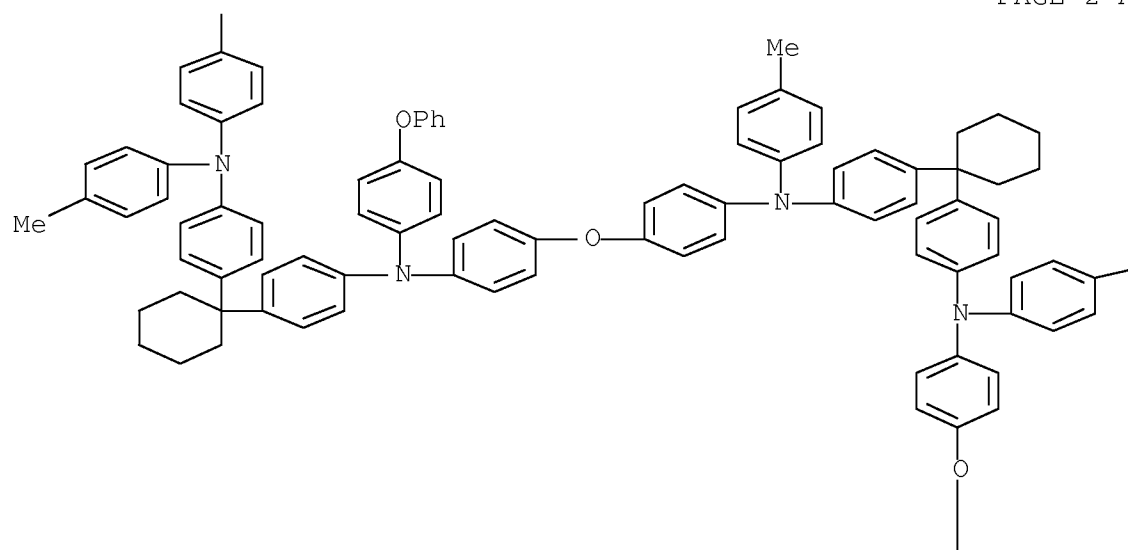




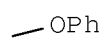
PAGE 1-A



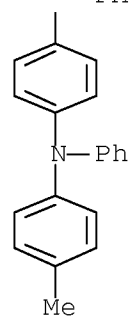
PAGE 2-A



PAGE 2-B



PAGE 3-A



CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 73

ST hole transporting agent arom polyamine; electrophotog photoreceptor  
polyamine pos hole transporter; **electroluminescent** device  
polyamine pos hole transporter

IT Polyamines  
(arom.; electrophotog. photoreceptor and **electroluminescent**  
device contg. arom. polyamine hole-transporting material)

IT **Electroluminescent** devices  
Electrophotographic photoconductors (photoreceptors)  
(electrophotog. photoreceptor and **electroluminescent**  
device contg. arom. polyamine hole-transporting material)

IT 186671-99-8 ~~186672-00-4~~ 186672-01-5 186672-02-6  
186672-03-7 186672-04-8 186672-05-9 186672-06-0  
~~186672-07-1~~ 186672-08-2 ~~186672-09-3~~  
~~186672-10-6~~ 186811-51-8  
(electrophotog. photoreceptor and **electroluminescent**  
device contg. arom. polyamine hole-transporting material)

IT 186671-98-7P  
(electrophotog. photoreceptor and **electroluminescent**  
device contg. arom. polyamine hole-transporting material)

=> D L33 1-22 BIB ABS HITSTR HITIND

L33 ANSWER 1 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 146:472315 HCA Full-text

TI Method for manufacture of organic **electroluminescent** element  
and organic **electroluminescent** element and display, and  
illuminating device

IN Taka, Hideo; Tanaka, Tatsuo; Suzurizato, Yoshiyuki; Kita, Hiroshi

PA Konica Minolta Holdings, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 107pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2007110097	A	20070426	JP 2006-246467	20060912
PRAI	JP 2005-266661	A	20050914		

AB The title element comprises org. layers between the cathode and the anode,  
wherein  $\geq 1$  of the org. layers contains purifiable medium-mol. compd. or low-  
mol. polymers and the layer has a d. of 1.10-1.25 g/cm<sup>3</sup>. The element can be  
manufd. by coating method. The element shows long service life and can be  
driven at low voltages.

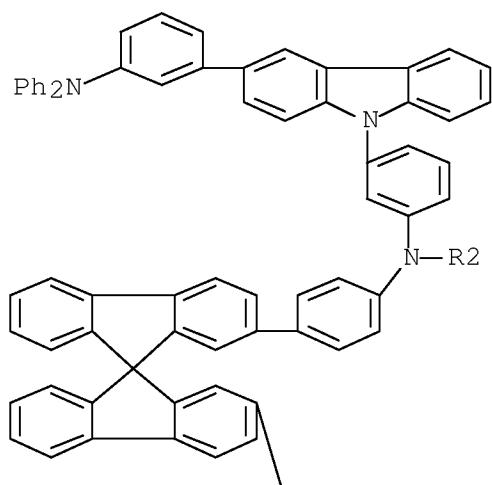
IT ~~934972-66-4~~  
(~~light-emitting~~ layer; manuf. of org.

electroluminescence elements and displays and illuminating devices)

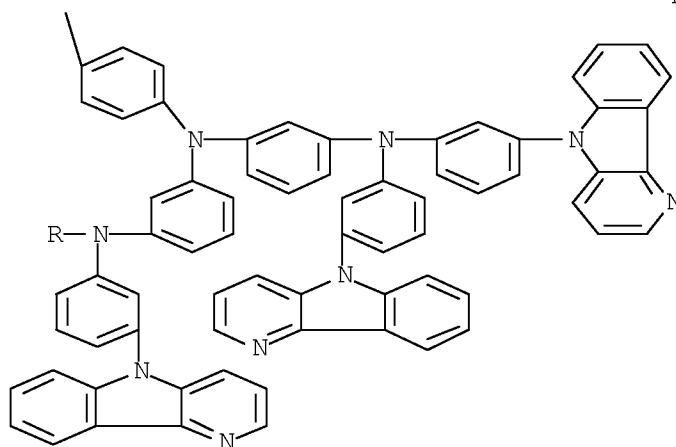
RN 934972-66-4 HCA

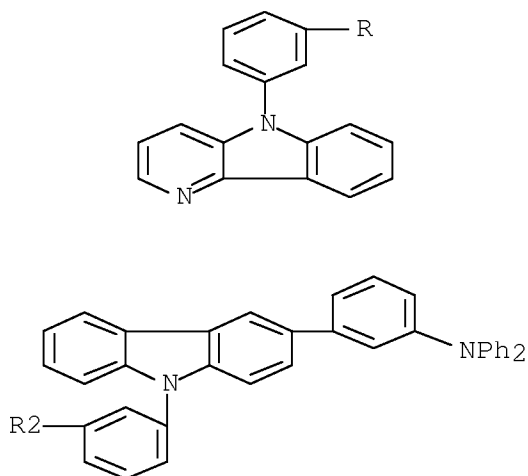
CN 1,3-Benzenediamine, N1-[4-[2'-[4-[bis[3-[3-[3-(diphenylamino)phenyl]-9H-carbazol-9-yl]phenyl]amino]phenyl]-9,9'-spirobi[9H-fluoren]-2-yl]phenyl]-N1-[3-[bis[3-(5H-pyrido[3,2-b]indol-5-yl)phenyl]amino]phenyl]-N3,N3-bis[3-(5H-pyrido[3,2-b]indol-5-yl)phenyl]- (CA INDEX NAME)

PAGE 1-A



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CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 73

ST org **electroluminescent** element display

IT **Electroluminescent** devices

(displays; manuf. of org. **electroluminescence** elements and displays and illuminating devices)

IT Luminescent screens

(**electroluminescent**; manuf. of org. **electroluminescence** elements and displays and illuminating devices)

IT Light sources

(manuf. of org. **electroluminescence** elements and displays and illuminating devices)

IT 934972-69-7 934972-70-0 934972-71-1 934972-72-2

(hole transport material; manuf. of org. **electroluminescence** elements and displays and illuminating devices)

IT 220859-81-4 550378-78-4 693794-98-8 728045-12-3 929539-56-0  
929539-58-2 934972-65-3 ~~934972-66-4~~ 934972-68-6

(light-emitting layer; manuf. of org. **electroluminescence** elements and displays and illuminating devices)

L33 ANSWER 2 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 143:485611 HCA Full-text

TI Green-emitting **electroluminescent** structure with improved

thermal stability containing luminescent oxyquinolate zinc complex  
 IN Yakushchenko, I. K.; Kaplunov, M. G.; Krasnikova, S. S.; Efimov, O. N.  
 PA Institut Problem Khimicheskoi Fiziki Rossiiskoi Akademii Nauk, Russia  
 SO Russ., 5 pp.  
 CODEN: RUXXE7  
 DT Patent  
 LA Russian  
 FAN.CNT 1

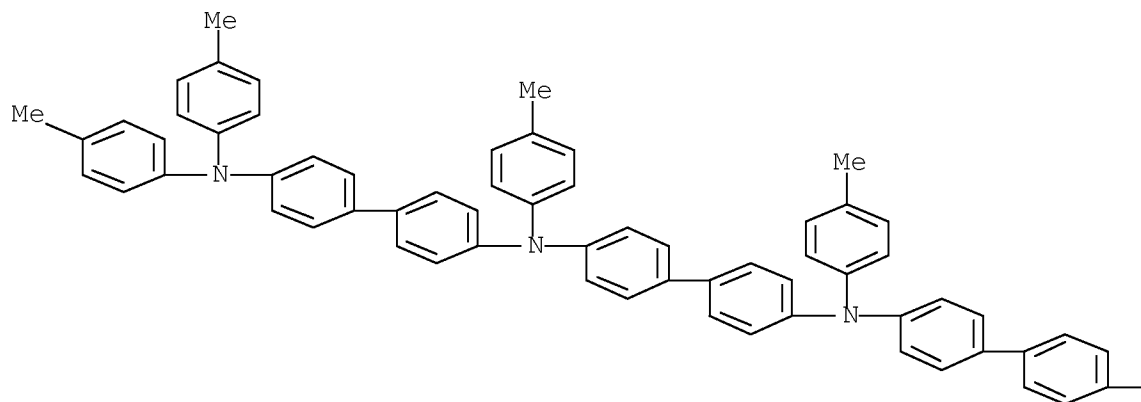
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RU 2265040	C1	20051127	RU 2004-122577	20040726
PRAI	RU 2004-122577		20040726		
OS	MARPAT 143:485611				

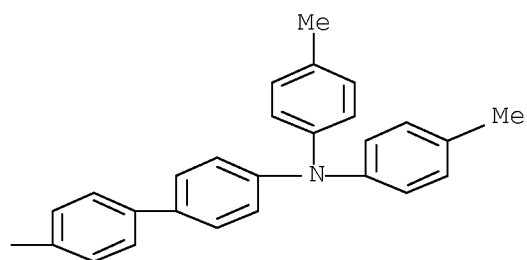
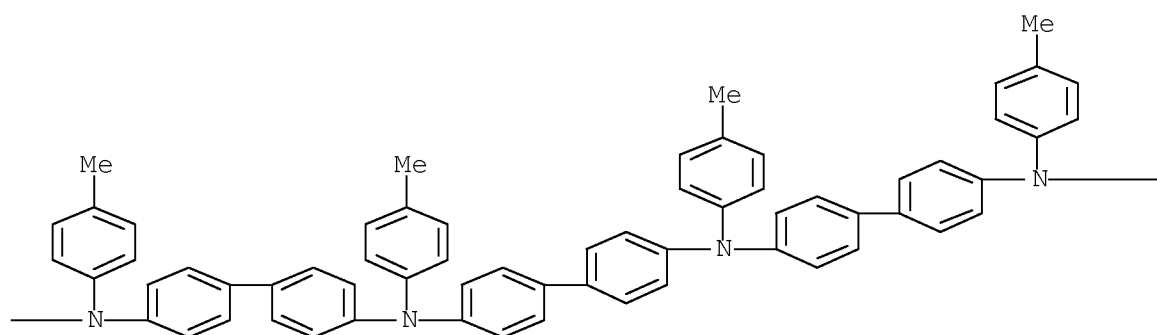
AB **Electroluminescent** structure is described which comprises of an injecting layer, a metal chelate complex-based active luminescent layer, a hole-transition layer and a hole-injecting layer, where the luminescent is selected from zinc 8-hydroxy-2-methoxyquinolate and zinc 8-hydroxy-2-methylquinolate. The **electroluminescent** structure shows emission in the green spectral region and has an increased heat resistance.

IT **869580-55-2 869580-57-4**  
 (hole-transporting layer; green-emitting **electroluminescent** structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)

RN 869580-55-2 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N4,N4'-bis[4'-[[4'-[[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4'-bis(4-methylphenyl)- (CA INDEX NAME)

PAGE 1-A

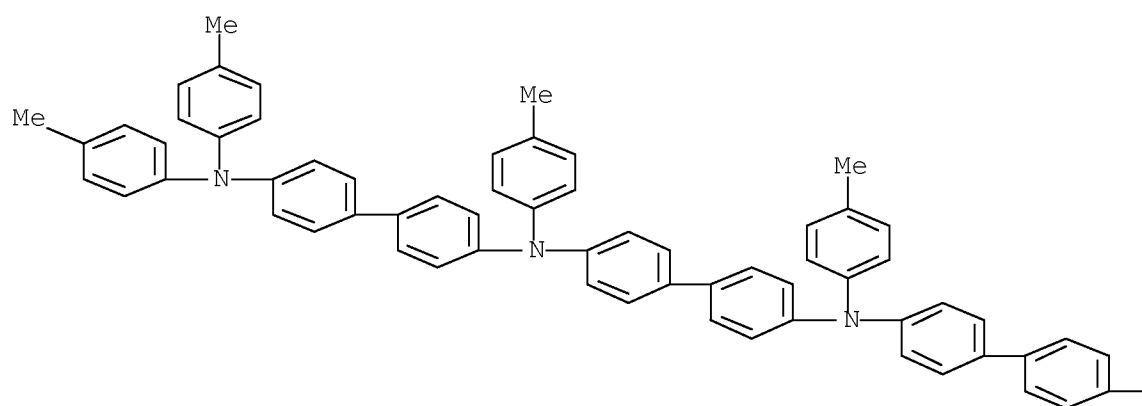




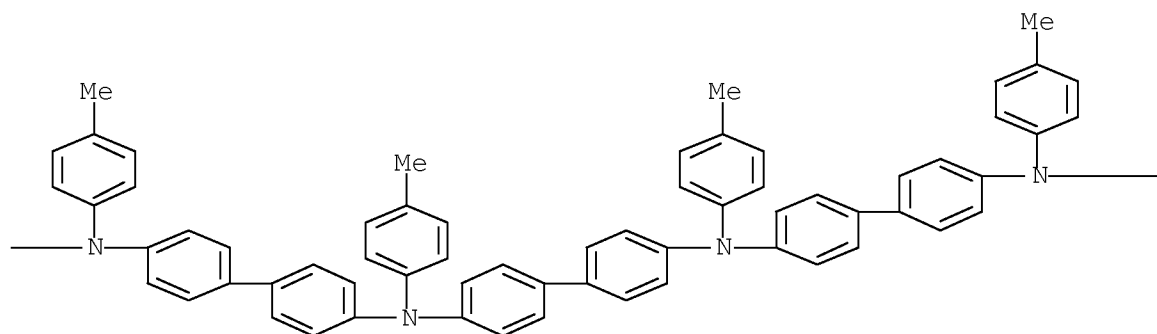
RN 869580-57-4 HCA

CN [1,1'-Biphenyl]-4,4'-diamine, N4-[4'-[[4'-[[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4'-[4'-[[4'-[[4'-[[4'-[bis(4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl](4-methylphenyl)amino][1,1'-biphenyl]-4-yl]-N4,N4'-bis(4-methylphenyl)- (CA INDEX NAME)

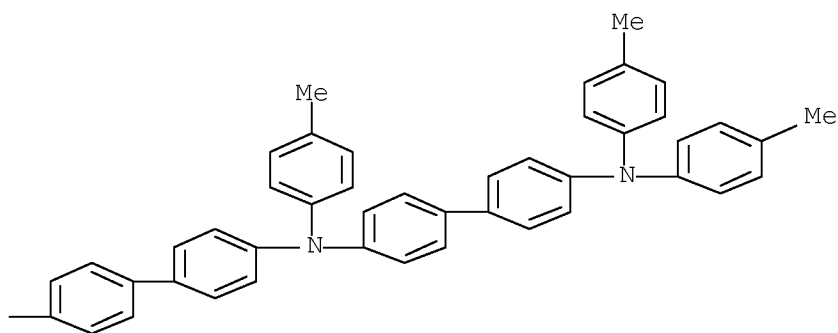
PAGE 1-A



PAGE 1-B







- IPCI C09K0011-06 [ICM,7]; C07F0003-06 [ICS,7]; C07F0003-00 [ICS,7,C\*];  
C07D0215-24 [ICS,7]; C07D0215-00 [ICS,7,C\*]
- IPCR C09K0011-06 [I,C\*]; C09K0011-06 [I,A]; C07D0215-00 [I,C\*]; C07D0215-24  
[I,A]; C07F0003-00 [I,C\*]; C07F0003-06 [I,A]
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)  
Section cross-reference(s): 76
- ST green **electroluminescent** device zinc hydroxy  
methoxyquinolate **OLED**; zinc hydroxy methylquinolate green  
**electroluminescent** device **OLED**
- IT Luminescent substances  
(**electroluminescent**, green-emitting; green-emitting  
**electroluminescent** structure with improved thermal  
stability contg. luminescent zinc oxyquinolate complex)
- IT **Electroluminescent** devices  
(green-emitting **electroluminescent** structure with  
improved thermal stability contg. luminescent zinc oxyquinolate  
complex)
- IT **Electroluminescent** devices  
(green-emitting; green-emitting **electroluminescent**  
structure with improved thermal stability contg. luminescent zinc  
oxyquinolate complex)
- IT 117665-21-1  
(green-emitting **electroluminescent** structure with  
improved thermal stability contg. luminescent zinc oxyquinolate  
complex)
- IT 14128-73-5P 267417-43-6P  
(green-emitting **electroluminescent** structure with  
improved thermal stability contg. luminescent zinc oxyquinolate  
complex)
- IT 50926-11-9, Indium tin oxide 65181-78-4, TPD  
(green-emitting **electroluminescent** structure with  
improved thermal stability contg. luminescent zinc oxyquinolate  
complex and)
- IT 77-78-1, Dimethylsulphate 148-24-3, 8-Hydroxy quinoline, reactions  
(green-emitting **electroluminescent** structure with

improved thermal stability contg. luminescent zinc oxyquinolate complex prepd. using)

IT 1127-45-3P, 8-Hydroxy quinoline-1-oxide 6686-05-1P 74668-72-7P  
(green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex prepd. using)

IT 869580-55-2 869580-57-4  
(hole-transporting layer; green-emitting electroluminescent structure with improved thermal stability contg. luminescent zinc oxyquinolate complex)

L33 ANSWER 3 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 143:469728 HCA Full-text

TI Organic compound for electroluminescent device

IN Schaefer, Thomas; Bardon, Kristina

PA Ciba Specialty Chemicals Holding Inc., Switz.

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA English

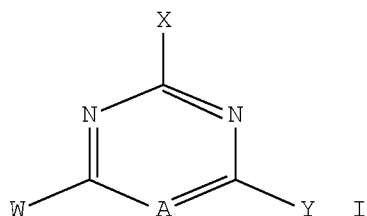
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005105950	A1	20051110	WO 2005-EP51731	20050420
	CA 2562416	A1	20051110	CA 2005-2562416	20050420
	EP 1743011	A1	20070117	EP 2005-747379	20050420
	CN 1950479	A	20070418	CN 2005-80013601	20050420
	BR 2005010482	A	20071106	BR 2005-10482	20050420
	JP 2007534722	T	20071129	JP 2007-510020	20050420
	US 20080199726	A1	20080821	US 2006-587691	20061026
	IN 2006CN03974	A	20070727	IN 2006-CN3974	20061030
	KR 2007010191	A	20070122	KR 2006-725158	20061129
PRAI	EP 2004-101826	A	20040429		
	WO 2005-EP51731	W	20050420		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 143:469728

GI



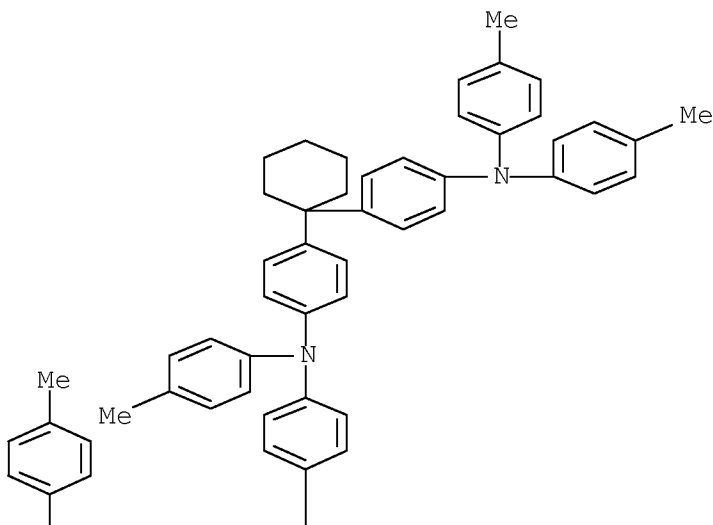
AB A org. compd. is described by the general formula I (where A = CH, N; X,W,Y  
= (independently) arom. groups described in the text). An  
electroluminescent devices using the org. compd. is also described.

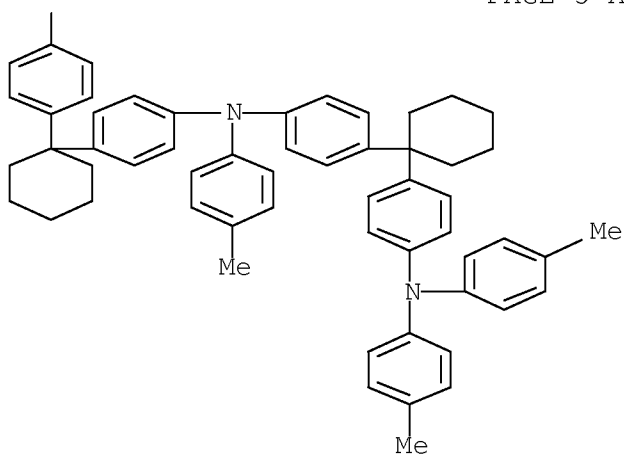
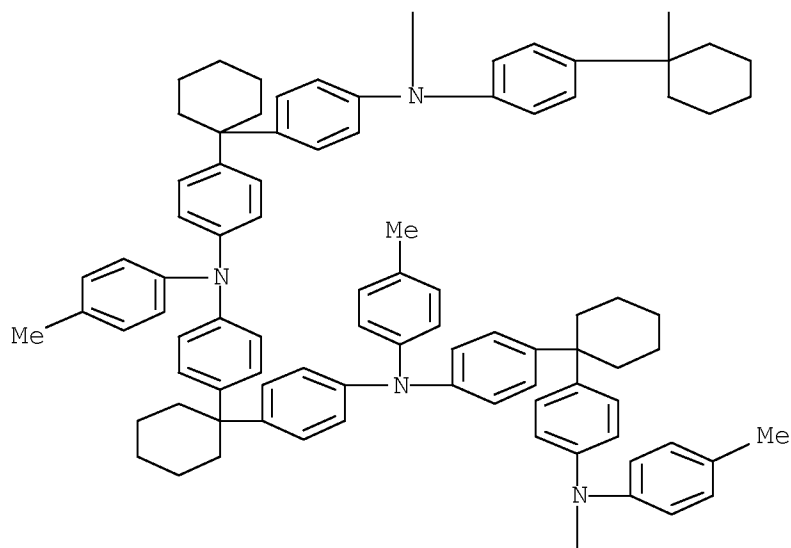
IT 754980-67-1  
(hole transporting layer; triazine or pyrimidine compds. for  
electroluminescent device)

RN 754980-67-1 HCA

CN Benzenamine, 4,4'-cyclohexylidenebis[N-[4-[1-[4-[[4-[1-[4-[[4-[1-[4-  
[bis(4-methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-  
methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-  
methylphenyl)amino]phenyl]cyclohexyl]phenyl]-N-(4-methylphenyl)- (9CI)  
(CA INDEX NAME)

PAGE 1-A





IPCI C09K0011-06 [ICM,7]; H05B0033-14 [ICS,7]; C07D0239-26 [ICS,7];  
 C07D0239-00 [ICS,7,C\*]  
 IPCR C07D0239-00 [I,C\*]; C07D0239-26 [I,A]; C09K0011-06 [I,C\*]; C09K0011-06  
 [I,A]; H01L0051-05 [I,C\*]; H01L0051-30 [I,A]; H05B0033-14 [I,C\*];  
 H05B0033-14 [I,A]  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 22, 76  
 ST electroluminescent device triazine pyrimidine compd

IT Electroluminescent devices  
(triazine or pyrimidine compds. for electroluminescent device)

IT 2085-33-8, Alq3 14855-54-0 58280-31-2 93555-65-8 146162-64-3  
188049-36-7 188049-37-8  
(electron transporting layer; triazine or pyrimidine compds. for electroluminescent device)

IT 58328-31-7 124729-98-2, 4,4'4''-Tris(N-(3-methylphenyl)-N-phenylamino)triphenylamine  
(hole injecting layer; triazine or pyrimidine compds. for electroluminescent device)

IT 58473-78-2 65181-78-4 123847-85-8 151026-65-2 166444-98-0  
754980-63-7 754980-64-8 754980-65-9 754980-66-0  
754980-67-1  
(hole transporting layer; triazine or pyrimidine compds. for electroluminescent device)

IT 517-51-1 1047-16-1 1450-63-1 51325-91-8 99762-78-4  
144810-07-1 210485-42-0  
(light emitting layer; triazine or pyrimidine compds. for electroluminescent device)

IT 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole  
(triazine or pyrimidine compds. for electroluminescent device)

IT 863878-53-9P 869016-09-1P 869016-10-4P  
(triazine or pyrimidine compds. for electroluminescent device)

IT 13438-50-1, 3-Bromo-fluoranthene 58536-47-3 61676-62-8,  
2-Isopropoxy-4,4,5,5-tetramethyl-1,3,2-dioxaborolane 460347-59-5  
(triazine or pyrimidine compds. for electroluminescent device)

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 4 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 143:335935 HCA Full-text

TI Organic electroluminescent devices with arylamine  
hole-injecting and hole-transporting materials

IN Lee, Kyung Hoon; Seo, Jeong Dae; Jeong, Hyun Cheol; Park, Chun Gun;  
Kim, Jung Keun; Kim, Sung Kab

PA LG Electronics Inc., S. Korea; LG Display Co., Ltd.

SO U.S. Pat. Appl. Publ., 60 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 20050208334	A1	20050922	US 2005-84021	20050321
	US 7576484	B2	20090818		
	KR 2005094195	A	20050927	KR 2004-19356	20040322
	EP 1586616	A2	20051019	EP 2005-5801	20050317
	EP 1586616	A3	20070704		

CN 1674747	A	20050928	CN 2005-10056457	20050322
CN 100468822	C	20090311		
JP 2005276832	A	20051006	JP 2005-81539	20050322
JP 4231491	B2	20090225		
PRAI KR 2004-19356	A	20040322		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 143:335935

AB Org. ~~electroluminescent~~ devices comprising an anode, a hole-injecting layer, a hole-transporting layer, an emitting layer, and a cathode are described in which the hole-injecting and hole-transporting layers are formed of materials are described by the general formula  $R_1R_2N-p-C_6H_4N(Ph)-p-C_6H_4[N(Ph)-p-C_6H_4]_nN(Ph)-p-C_6H_4NR_1R_2$  ( $n = 1-4$ ; and  $R_1$  and  $R_2 =$  (un)substituted arom., hetero ring, aliph., or H).

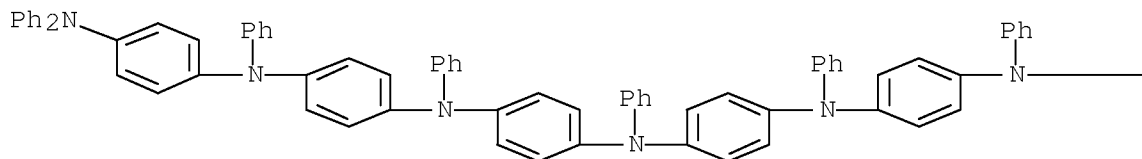
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 865151-01-5 865151-02-6 865151-03-7  
 865151-04-8 865151-05-9 865151-06-0  
 865151-07-1

(org. ~~electroluminescent~~ devices with arylamine hole-injecting and hole-transporting materials)

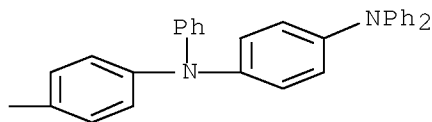
RN 865150-90-9 HCA

CN 1,4-Benzenediamine, N1,N4-bis[4-[[4-[[4-(diphenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)

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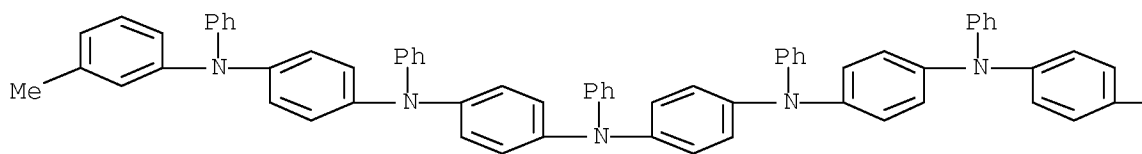
PAGE 1-B



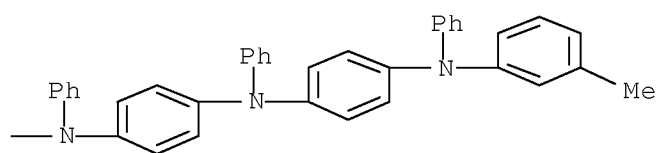
RN 865150-96-5 HCA

CN 1,4-Benzenediamine, N1,N4-bis[4-[[4-[[4-(3-methylphenyl)phenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)

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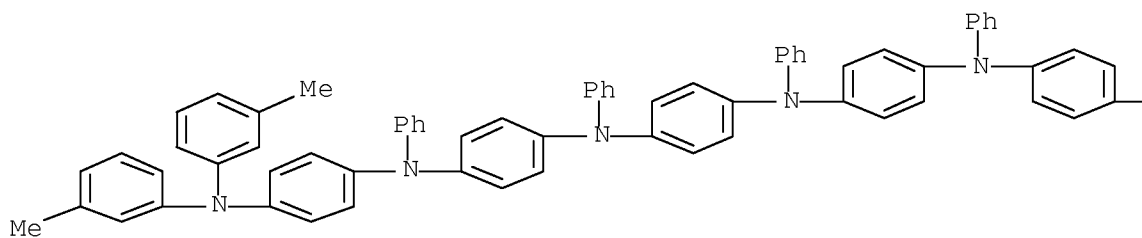
PAGE 1-B



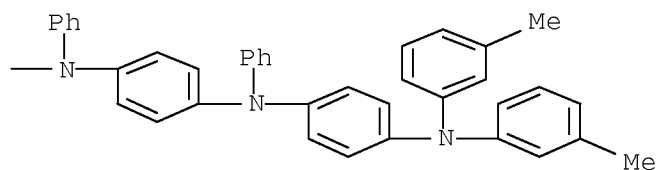
RN 865150-98-7 HCA

CN 1,4-Benzenediamine, N1,N4-bis[4-[[4-[[4-bis(3-methylphenyl)amino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)

PAGE 1-A

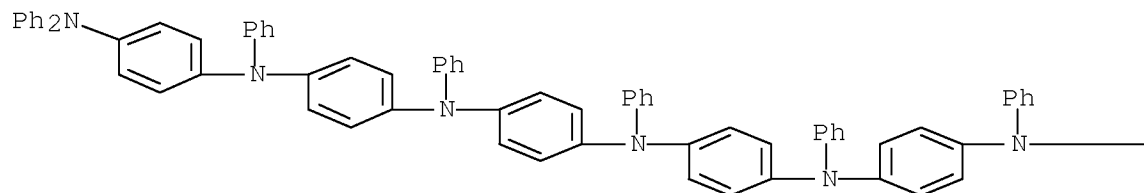


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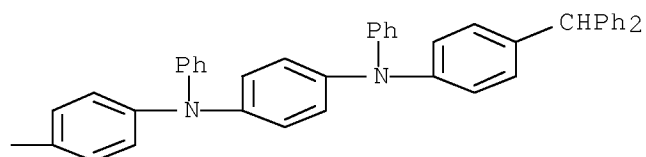


RN 865151-01-5 HCA  
 CN 1,4-Benzenediamine, N-[4-[[4-[[4-(diphenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N'-[4-[[4-[[4-(diphenylmethyl)phenyl]phenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

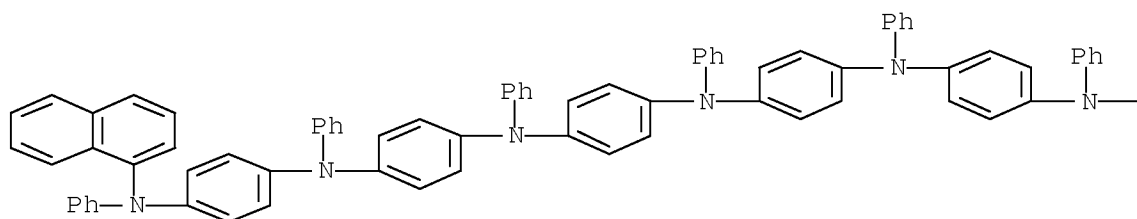


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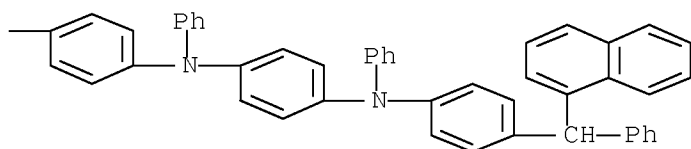


RN 865151-02-6 HCA  
 CN 1,4-Benzenediamine, N-[4-[[4-[[4-(1-naphthalenylphenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N'-[4-[[4-[[4-[[4-(1-naphthalenylphenylmethyl)phenyl]phenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

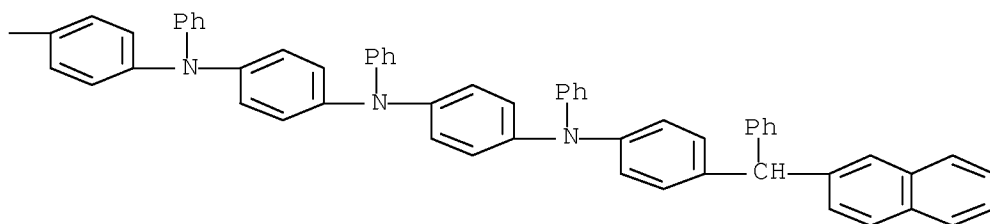
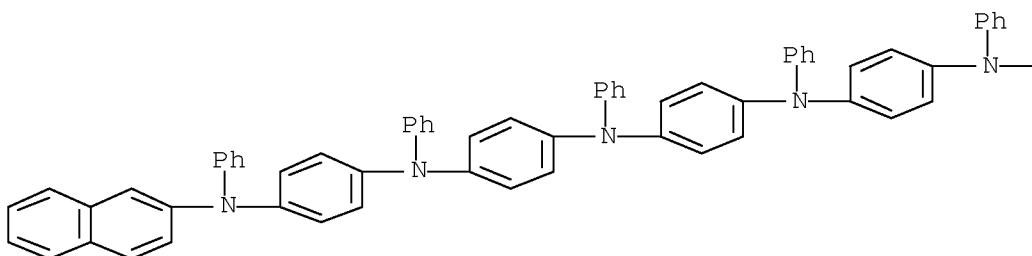
PAGE 1-A







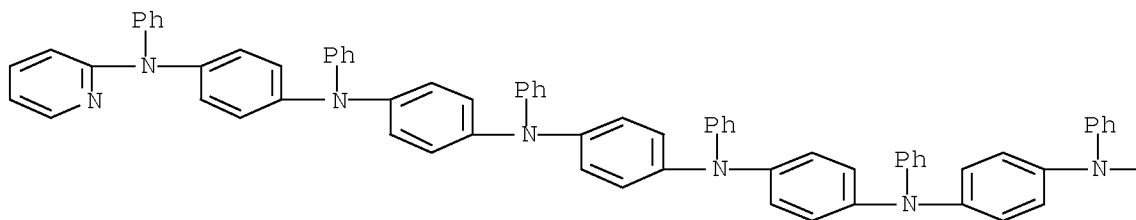
RN 865151-03-7 HCA  
 CN 1,4-Benzenediamine, N-[4-[[4-[[4-(2-naphthalenylphenylamino)phenyl]phenylamino]phenyl]phenylamino]phenyl]-N'-[4-[[4-[[4-[[4-(2-naphthalenylphenylmethyl)phenyl]phenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)



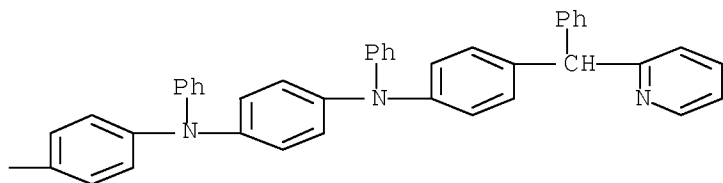
RN 865151-04-8 HCA  
 CN 1,4-Benzenediamine, N,N'-diphenyl-N-[4-[phenyl[4-[phenyl[4-[phenyl[4-(phenyl-2-pyridinylmethyl)phenyl]amino]phenyl]amino]phenyl]amino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

1]-N'-[4-[phenyl[4-[phenyl[4-(phenyl-2-  
pyridinylamino)phenyl]amino]phenyl]amino]phenyl]- (9CI) (CA INDEX  
NAME)

PAGE 1-A



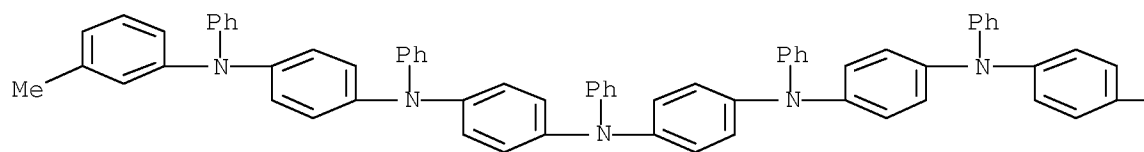
PAGE 1-B

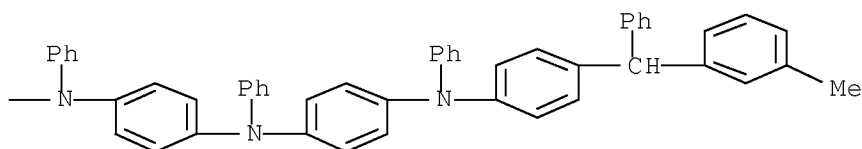


RN 865151-05-9 HCA

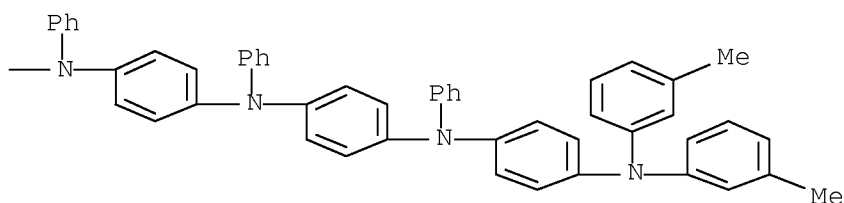
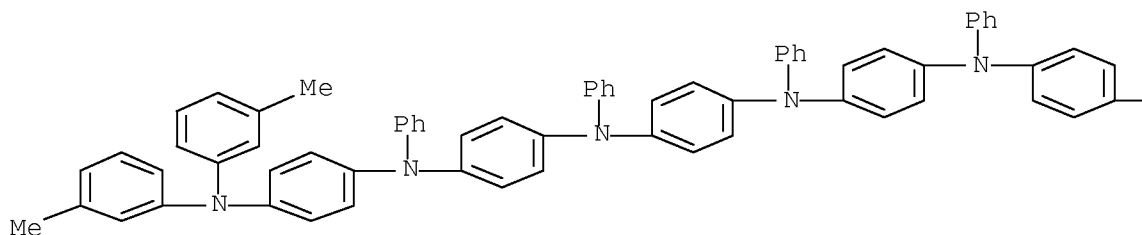
CN 1,4-Benzenediamine, N-[4-[[4-[[4-[(3-methylphenyl)phenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N'-[4-[[4-[[4-[[4-[(3-methylphenyl)phenylmethyl]phenyl]phenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N,N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

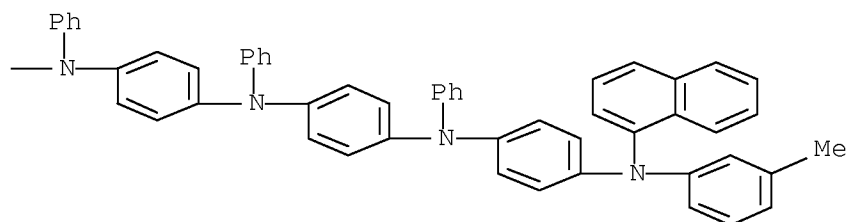
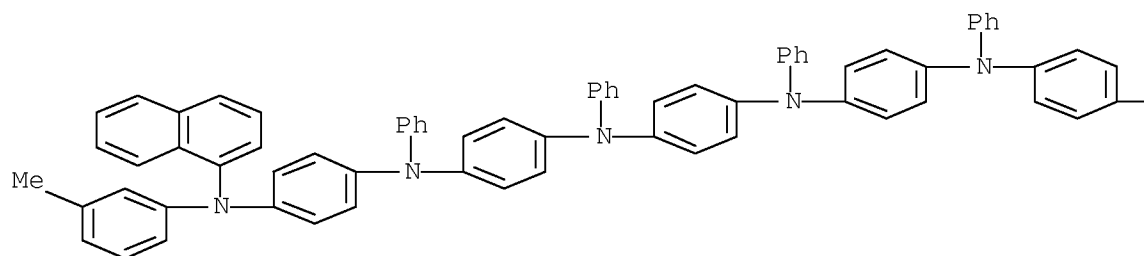




RN 865151-06-0 HCA  
 CN 1,4-Benzenediamine, N1-[4-[[4-[[4-[bis(3-methylphenyl)amino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N4-[4-[[4-[[4-[[4-[bis(3-methylphenyl)amino]phenyl]phenylamino]phenyl]phenyl]phenyl]amino]phenyl]phenylamino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)



RN 865151-07-1 HCA  
 CN 1,4-Benzenediamine, N1-[4-[[4-[[4-[(3-methylphenyl)-1-naphthalenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]-N4-[4-[[4-[[4-[[4-[(3-methylphenyl)-1-naphthalenylamino]phenyl]phenylamino]phenyl]phenylamino]phenyl]phenyl]amino]phenyl]-N1,N4-diphenyl- (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 76

ST org **electroluminescent** device hole injecting transporting material arylamine deriv

IT **Electroluminescent** devices

(org.; org. **electroluminescent** devices with arylamine hole-injecting and hole-transporting materials)

IT	865149-91-3	865149-92-4	865149-93-5	865149-94-6	865149-95-7
	865149-96-8	865149-97-9	865149-98-0	865149-99-1	865150-00-1
	865150-01-2	865150-02-3	865150-03-4	865150-04-5	865150-05-6
	865150-06-7	865150-07-8	865150-08-9	865150-09-0	865150-10-3
	865150-11-4	865150-12-5	865150-13-6	865150-14-7	865150-15-8
	865150-16-9	865150-17-0	865150-18-1	865150-19-2	865150-20-5
	865150-21-6	865150-23-8	865150-24-9	865150-25-0	865150-26-1
	865150-27-2	865150-28-3	865150-29-4	865150-30-7	865150-31-8
	865150-32-9	865150-33-0	865150-34-1	865150-35-2	865150-36-3
	865150-37-4	865150-38-5	865150-39-6	865150-40-9	865150-41-0
	865150-42-1	865150-43-2	865150-47-6	865150-50-1	865150-54-5
	865150-56-7	865150-59-0	865150-61-4	865150-65-8	865150-67-0
	865150-70-5	865150-71-6	865150-72-7	865150-73-8	865150-74-9
	865150-75-0	865150-76-1	865150-77-2	865150-78-3	865150-79-4
	865150-80-7	865150-81-8	865150-82-9	865150-83-0	865150-84-1
	865150-85-2	865150-86-3	865150-87-4	865150-88-5	865150-89-6
	<del>865150-90-9</del>	865150-91-0	865150-92-1	865150-93-2	

865150-94-3 865150-95-4 ~~865150-96-5~~ 865150-97-6  
865150-98-7 865150-99-8 865151-00-4 ~~865151-01-5~~  
865151-02-6 865151-03-7 865151-04-8  
865151-05-9 865151-06-0 865151-07-1  
865151-08-2

(org. electroluminescent devices with arylamine  
hole-injecting and hole-transporting materials)

IT 865150-22-7P

(org. electroluminescent devices with arylamine  
hole-injecting and hole-transporting materials)

IT 62-53-3, Aniline, reactions 74-31-7,  
N,N'-Diphenyl-1,4-phenylenediamine 106-37-6, 1,4-Dibromobenzene  
122-39-4, Diphenylamine, reactions

(org. electroluminescent devices with arylamine  
hole-injecting and hole-transporting materials)

IT 19606-98-5P 36809-26-4P, (4-Bromophenyl)diphenylamine 525602-17-9P

(org. electroluminescent devices with arylamine  
hole-injecting and hole-transporting materials)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 5 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 143:286429 HCA Full-text

TI Process for preparation of 2,4,5-triarylimidazole and  
1,2,4,5-tetraarylimidazole derivatives as electroluminescent  
materials

IN Mataka, Shuntaro; Hatta, Taizo

PA Nissan Chemical Industries, Ltd., Japan

SO PCT Int. Appl., 28 pp.

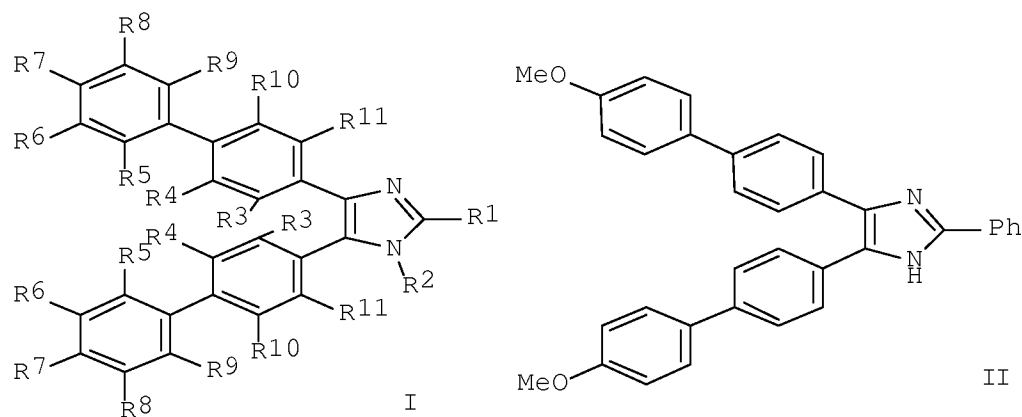
CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005085208	A1	20050915	WO 2005-JP3110	20050225
PRAI	JP 2004-65342	A	20040309		
OS	CASREACT 143:286429; MARPAT 143:286429				
GI					

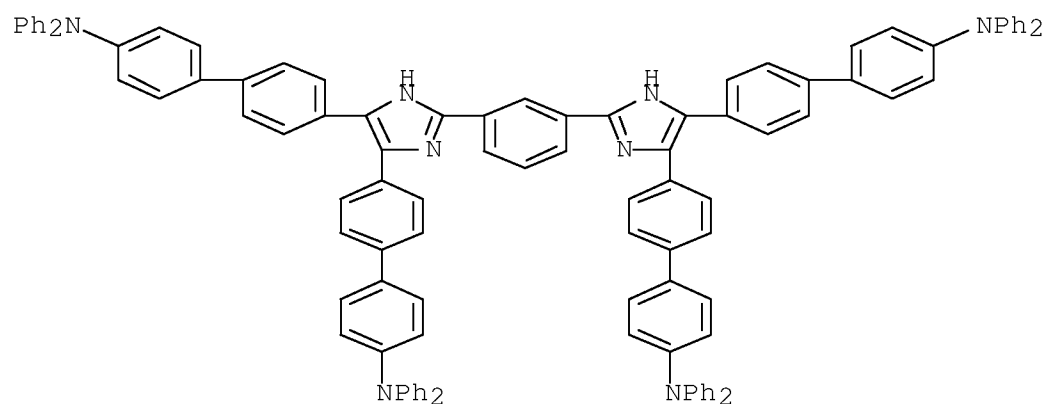


AB This invention pertains to a method for producing 2,4,5-triarylimidazole and 1,2,4,5-tetraarylimidazole derivs. I [wherein R1 = (un)substituted Ph, Naphthyl, or biphenyl; R2 = H, (un)substituted Ph, or Naphthyl; R3, R4, R10, and R11 = independently H, halo, alkoxy, etc.; R5-R9 = independently H, Ph, halo, etc.]. For example, 4,4'-bis[4-(4-methoxyphenyl)benzoyl] was reacted with benzaldehyde and ammonium acetate in acetic acid to give II (76%). I are useful as **electroluminescent** materials.

IT **864186-20-9P**  
(prepn. of imidazole derivs. as **electroluminescent** materials)

RN 864186-20-9 HCA

CN [1,1'-Biphenyl]-4-amine, 4'-[2-[3-[4,5-bis[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-1H-imidazol-2-yl]phenyl]-4-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-1H-imidazol-5-yl]-N,N-diphenyl- (CA INDEX NAME)



IPCI C07D0233-64 [ICM,7]; C07D0233-00 [ICM,7,C\*]; C09K0011-06 [ICS,7];  
H05B0033-14 [ICS,7]

IPCR C07D0233-00 [I,C\*]; C07D0233-64 [I,A]; C09K0011-06 [I,C\*]; C09K0011-06

[I,A]; H01L0051-50 [N,C\*]; H01L0051-50 [N,A]; H05B0033-14 [I,C\*];  
H05B0033-14 [I,A]

CC 28-9 (Heterocyclic Compounds (More Than One Hetero Atom))  
Section cross-reference(s): 25, 73

ST prepn phenyl amino imidazole ~~electroluminescent~~ material  
solar cell

IT Luminescent substances  
( ~~electroluminescent~~; prepn. of imidazole derivs. as  
~~electroluminescent~~ materials)

IT ~~Electroluminescent~~ devices  
Solar cells  
(prepn. of imidazole derivs. as ~~electroluminescent~~  
materials)

IT 36741-16-9P 864186-21-0P  
(intermediate; prepn. of imidazole derivs. as  
~~electroluminescent~~ materials)

IT 14221-01-3, Tetrakis(triphenylphosphine)palladium  
(prepn. of imidazole derivs. as ~~electroluminescent~~  
materials)

IT 864186-14-1P 864186-15-2P 864186-16-3P 864186-17-4P  
864186-18-5P 864186-19-6P ~~864186-20-9P~~  
(prepn. of imidazole derivs. as ~~electroluminescent~~  
materials)

IT 62-53-3, Aniline, reactions 66-99-9, 2-Naphthalenecarboxaldehyde  
100-52-7, Benzaldehyde, reactions 105-07-7 626-19-7,  
1,3-Benzenedicarboxaldehyde 1122-91-4 35578-47-3 201802-67-7  
864186-22-1  
(prepn. of imidazole derivs. as ~~electroluminescent~~  
materials)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 6 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 143:27021 HCA Full-text

TI Synthesis of diphenylamine-substituted phenylazomethine dendrimers and  
the performance of organic ~~light-emitting~~ diodes

AU Cho, Jun-Sang; Kimoto, Atsushi; Higuchi, Masayoshi; Yamamoto, Kimihisa

CS Department of Chemistry, Faculty of Science & Technology, Keio  
University, Yokohama, 223-8522, Japan

SO Macromolecular Chemistry and Physics (2005), 206(6), 635-641  
CODEN: MCHPES; ISSN: 1022-1352

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB Novel diphenylamine-substituted phenylazomethine dendrimers (DP-Gn, n = 1,2)  
were designed and synthesized as hole-transport materials for org. ~~light-~~  
~~emitting~~ diodes (OLEDs). These dendrimers similar to phenylazomethine  
dendrimers showed a stepwise metal complexation with metal ions. They have  
good multi-redox properties attributed to the terminal amine moieties and  
excellent thermal stabilities. Double layer ~~electroluminescent~~ ( EL)  
devices using the dendrimers as a hole-transport material and Alq3 as the

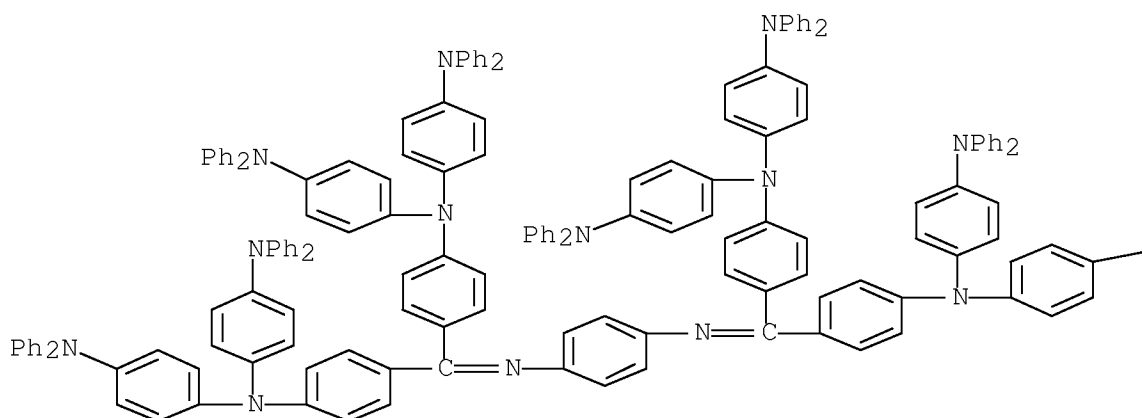
emitting and electron transport materials were fabricated. The EL performances of the devices increased with higher dendrimer generations. Moreover, by using the metal ion (0.5 equiv. SnCl<sub>2</sub>)-complexed DP-G2 dendrimers, the luminance and EL efficiency of the devices were drastically increased by more than double and over 30%, resp. These metal complexable phenylazomethine dendrimers are novel and promising materials for highly efficient OLEDs.

IT 852992-10-0DP, tin complexes 852992-10-0P  
(synthesis of diphenylamine-substituted phenylazomethine dendrimers and their performance as hole transport layer in light-emitting diodes)

RN 852992-10-0 HCA

CN 1,4-Benzenediamine, N1,N4-bis[bis[4-[bis[4-(diphenylamino)phenyl]amino]phenyl]methylene]- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

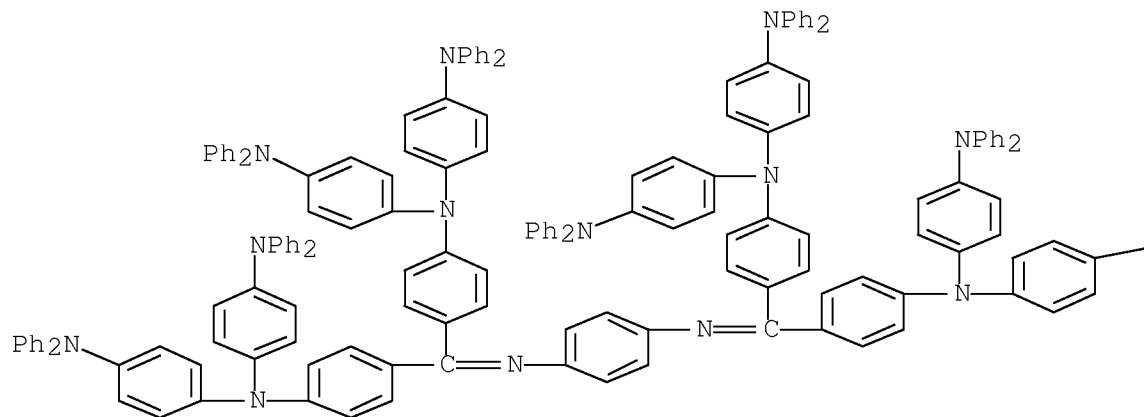
—NPh<sub>2</sub>

RN 852992-10-0 HCA



CN 1,4-Benzenediamine, N1,N4-bis[bis[4-[bis[4-(diphenylamino)phenyl]amino]phenyl]methylene]- (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—NPh<sub>2</sub>

CC 35-10 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 73  
 ST phenylamine substituted phenylazomethine dendrimer prepn property;  
 light emitting diode phenylazomethine dendrimer  
 IT Polyazomethines  
 (dendrimers; synthesis of diphenylamine-substituted  
 phenylazomethine dendrimers and their performance as hole transport  
 layer in light-emitting diodes)  
 IT Cyclic voltammetry  
 Glass transition temperature  
 HOMO (molecular orbital)  
 Oxidation potential  
 Thermal stability

UV and visible spectra  
 (of diphenylamine-substituted phenylazomethine dendrimers for use  
 as hole transport layer in **light-emitting**  
 diodes)

IT Dendritic polymers  
 (polyazomethines; synthesis of diphenylamine-substituted  
 phenylazomethine dendrimers and their performance as hole transport  
 layer in **light-emitting** diodes)

IT **Electroluminescent** devices  
 Luminescence, **electroluminescence**  
 (synthesis of diphenylamine-substituted phenylazomethine dendrimers  
 and their performance as hole transport layer in **light-**  
**emitting** diodes)

IT 2873-76-9P 852992-06-4P  
 (dendron; in synthesis of diphenylamine-substituted  
 phenylazomethine dendrimers and their performance as hole transport  
 layer in **light-emitting** diodes)

IT 280-57-9, 1,4-Diazabicyclo[2.2.2]octane 7550-45-0, Titanium  
 tetrachloride, uses  
 (in synthesis of diphenylamine-substituted phenylazomethine  
 dendrimers and their performance as hole transport layer in  
**light-emitting** diodes)

IT 62-53-3, Aniline, reactions 106-50-3, p-Phenylenediamine, reactions  
 591-50-4, Iodobenzene 611-98-3, 4,4'-Diaminobenzophenone  
 (in synthesis of diphenylamine-substituted phenylazomethine  
 dendrimers and their performance as hole transport layer in  
**light-emitting** diodes)

IT 7440-31-5DP, Tin, complexes with diphenylamine-substituted  
 phenylazomethine dendrimer 852992-07-5P 852992-08-6P  
 852992-09-7P 852992-10-0DP, tin complexes  
 852992-10-0P  
 (synthesis of diphenylamine-substituted phenylazomethine dendrimers  
 and their performance as hole transport layer in **light-**  
**emitting** diodes)

OSC.G 26 THERE ARE 26 CAPLUS RECORDS THAT CITE THIS RECORD (26  
 CITINGS)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 7 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 143:16103 HCA Full-text

TI Phenylazomethine dendrimer complexes as novel hole-transporting  
 materials of organic **light-emitting** diodes

AU Cho, Jun-Sang; Takanashi, Kensaku; Higuchi, Masayoshi; Yamamoto,  
 Kimihisa

CS Department of Chemistry, Faculty of Science and Technology, Keio  
 University, Yokohama, 223-8522, Japan

SO Synthetic Metals (2005), 150(1), 79-82  
 CODEN: SYMEDZ; ISSN: 0379-6779

PB Elsevier B.V.

DT Journal

LA English

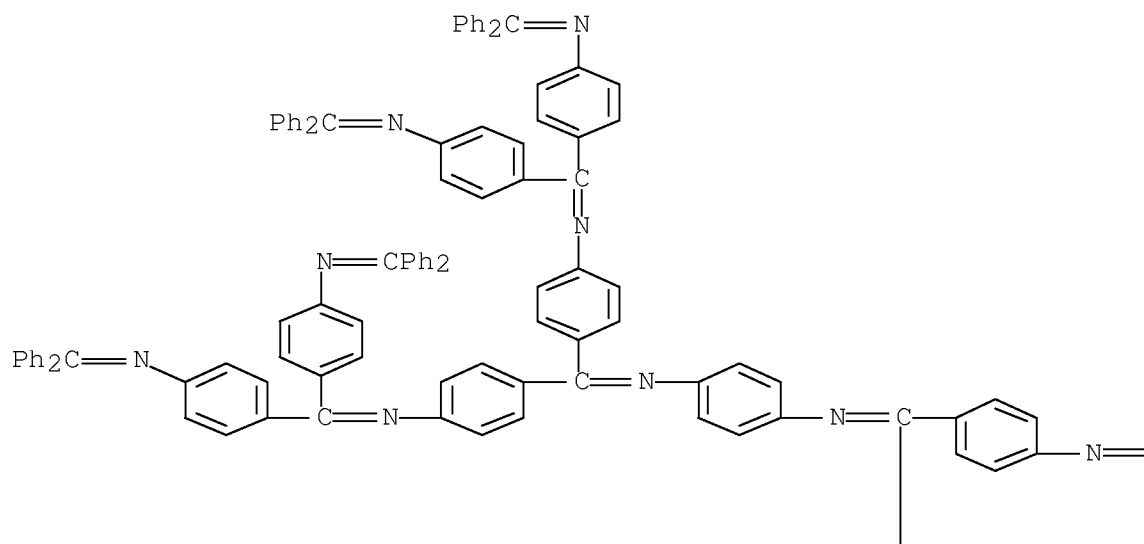
AB The EL (electroluminescence) performances of a double-layer org. light-emitting diodes ( OLED) that used metal complexable phenylazomethine dendrimers (PAM-Gn, n = 1-5) as novel hole-transporting materials and tris-(8-hydroxyquinoline) Al (Alq3) as an emitter with electron-transport material, were demonstrated. The device that used PAM-G3 showed the highest EL performance compared to that of the other generations. Also, by using the metal ion (SnCl2) complexed PAM dendrimers as a hole-transporting layer, the luminance and the EL efficiency of the devices were drastically increased over those of the dendrimers. These results suggested a lower energy gap of the hole-transporting layer and/or increased the ohmic cond. of the layers by metal complexation. In particular, the optimum metal ion equiv. for the highest EL performance was dependent on the dendrimer generation.

IT 304019-01-0  
(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

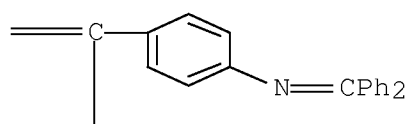
RN 304019-01-0 HCA

CN 1,4-Benzenediamine, N1,N4-bis[bis[4-[[bis[4-[(diphenylmethylene)amino]phenyl]methylene]amino]phenyl]methylene]-  
(CA INDEX NAME)

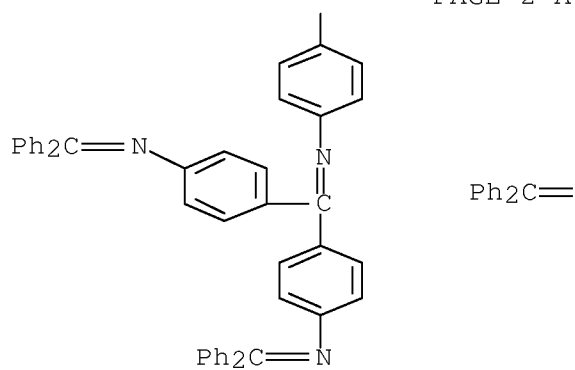
PAGE 1-A



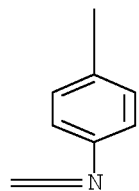
PAGE 1-B



PAGE 2-A



PAGE 2-B



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 35

ST phenylazomethine dendrimer metal complex hole transport light emitting diode

IT Hole transport  
(materials; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

IT Complexation  
Electroluminescent devices  
(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

IT Dendritic polymers  
(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

IT 50926-11-9, ITO  
(anode; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

IT 7429-90-5, Aluminum, uses 13400-13-0, Cesium fluoride  
(cathode; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

IT 106-50-3D, p-Phenylenediamine, reaction products with 4,4'-diaminobenzophenone homopolymer dendrimers, complex with tin ion  
119-61-9D, Benzophenone, reaction products with 4,4'-diaminobenzophenone homopolymer dendrimers, complex with tin ion  
304019-02-1D, 4,4'-Diaminobenzophenone homopolymer, complex with tin ion  
(dendritic; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

IT 2085-33-8, Al 8q  
(electron transporting material; phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

IT 7772-99-8D, Tin dichloride, complexes with phenylazomethine dendrimer  
304019-00-9 304019-00-9D, complex with tin ion 304019-01-0  
(phenylazomethine dendrimer complexes as novel hole-transporting materials of org. light-emitting diodes)

OSC.G 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS RECORD (23 CITINGS)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 8 OF 22 HCA COPYRIGHT 2010 ACS on STN

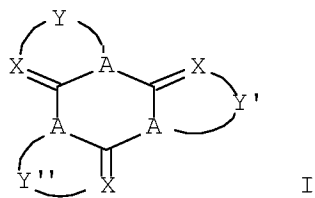
AN 142:438382 HCA Full-text

TI New organic compound and organic light emitting device using the same

IN Kim, Kong-Kyeom; Lee, Min-Jeong; Kim, Yeon-Hwan; Jang, Jun-Gi

PA Lg Chem, Ltd., S. Korea  
 SO PCT Int. Appl., 69 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2005037954	A1	20050428	WO 2004-KR2661	20041018
	KR 2005037378	A	20050421	KR 2004-82597	20041015
	TW 246356	B	20051221	TW 2004-93131461	20041015
	EP 1680479	A1	20060719	EP 2004-774798	20041018
	CN 1863891	A	20061115	CN 2004-80029288	20041018
	JP 2007512233	T	20070517	JP 2006-535273	20041018
	IN 2006KN00704	A	20070803	IN 2006-KN704	20060324
	IN 2009KN03404	A	20091218	IN 2009-KN3404	20090929
PRAI	KR 2003-72680	A	20031017		
	WO 2004-KR2661	W	20041018		
	IN 2006-KN704	A3	20060324		
OS	MARPAT 142:438382				
GI					



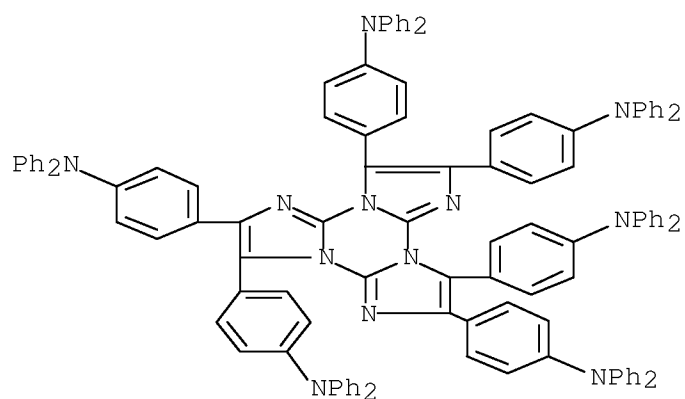
AB Org. compds. are claimed which are described by the general formula I (A = B or N; X = N or CR; R = H, halo, CN, NO<sub>2</sub>, formyl, acetyl, benzoyl, amide, styryl, acetylene, quinoline, quinazoline, phenanthroline, cuproine, anthraquinone, benzoquinone, quinone, acridine, (un)substituted alkyl, (un)substituted aryl, (un)substituted aralkyl, (un)substituted arylamine, (un)substituted alkylamine, (un)substituted aralkylamine, or (un)substituted heterocyclic; and Y, Y' and Y'' = independently selected (un)substituted arom. heterocycle that includes a 5-membered arom. heterocycle contg. A and X as ring members or a 6-membered arom. heterocycle contg. A and X as ring members). The use of the compds. in org. light-emitting devices (e.g., as hole-injecting, hole-transporting, light-emitting, electron-transporting, electron-injecting, etc. materials) is also described, as are light-emitting devices using ≥1 of the materials in ≥1 layer.

IT 850581-59-8 850581-82-7

(org. compds. with heteroatom-contg. cyclic trimer cores and org. light-emitting devices using them)

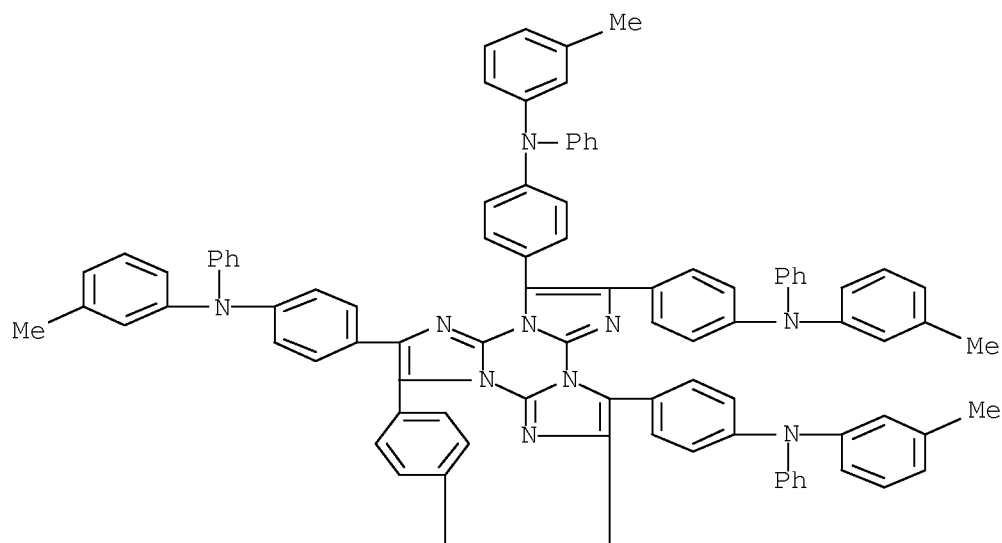
RN 850581-59-8 HCA

CN Benzenamine, 4-[2,6,7,10,11-pentakis[4-(diphenylamino)phenyl]triimidazo[1,2-a:1',2'-c:1'',2'''-e][1,3,5]triazin-3-yl]-N,N-diphenyl- (CA INDEX NAME)

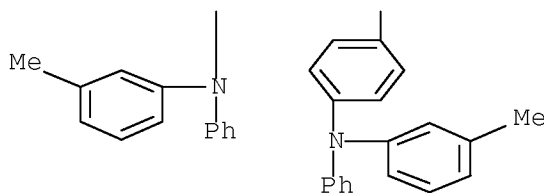


RN 850581-82-7 HCA

CN Benzenamine, N-(3-methylphenyl)-4-[2,6,7,10,11-pentakis[4-[(3-methylphenyl)phenylamino]phenyl]triimidazo[1,2-a:1',2'-c:1'',2'''-e][1,3,5]triazin-3-yl]-N-phenyl- (CA INDEX NAME)



PAGE 1-A



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 28, 76

ST heteroatom contg cyclic trimer deriv **light emitting** device

IT **Electroluminescent** devices  
 (org.; org. compds. with heteroatom-contg. cyclic trimer cores and org. **light-emitting** devices using them)

IT 1443-63-6 153448-23-8 848862-54-4 850581-44-1 850581-45-2  
 850581-46-3 850581-47-4 850581-48-5 850581-49-6 850581-50-9  
 850581-52-1 850581-53-2 850581-54-3 850581-55-4 850581-56-5  
 850581-57-6 850581-58-7 ~~850581-59-8~~ 850581-60-1  
 850581-61-2 850581-62-3 850581-63-4 850581-64-5 850581-65-6  
 850581-66-7 850581-67-8 850581-68-9 850581-69-0 850581-70-3  
 850581-71-4 850581-72-5 850581-73-6 850581-74-7 850581-75-8  
 850581-76-9 850581-77-0 850581-79-2 850581-81-6  
~~850581-82-7~~  
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. **light-emitting** devices using them)

IT 32833-13-9P 49855-18-7P 850581-43-0P 850581-51-0P 850581-83-8P  
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. **light-emitting** devices using them)

IT 479-27-6, 1,8-Diaminonaphthalene 668-94-0, 4,5-Diphenylimidazole  
 4857-06-1, 2-Chlorobenzimidazole 7726-95-6, Bromine, reactions  
 7790-99-0, Iodine monochloride 10025-87-3, Phosphorus oxychloride  
 153448-20-5  
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. **light-emitting** devices using them)

IT 5157-11-9P, 1H-Perimidin-2(3H)-one 30837-50-4P, 2-Chloroperimidine  
 683240-76-8P 850581-84-9P  
 (org. compds. with heteroatom-contg. cyclic trimer cores and org. **light-emitting** devices using them)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 9 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 141:403311 HCA Full-text

TI 1,3,6,8-Tetrasubstituted pyrene compounds, organic **electroluminescent** device and organic **electroluminescent** display



IN Sotoyama, Wataru  
 PA Fujitsu Limited, Japan  
 SO PCT Int. Appl., 45 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE -----
PI	WO 2004096743	A1	20041111	WO 2003-JP5417	20030428
	EP 1619177	A1	20060125	EP 2003-728002	20030428
	EP 1619177	B1	20080227		
	JP 4192152	B2	20081203	JP 2004-571293	20030428
	US 20050156164	A1	20050721	US 2005-74899	20050309
	US 7571894	B2	20090811		
PRAI	WO 2003-JP5417	W	20030428		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 141:403311

AB The invention refers to an org. **electroluminescent** device contg., as a luminescent material, a 1,3,6,8-tetrasubstituted pyrene compd. wherein the substituents are Ph rings contg. at least one of the following as a substituent: -NR6R7, -SiR8R9R10, -SR11, or -OR12 [R6-12 = H or substituent].

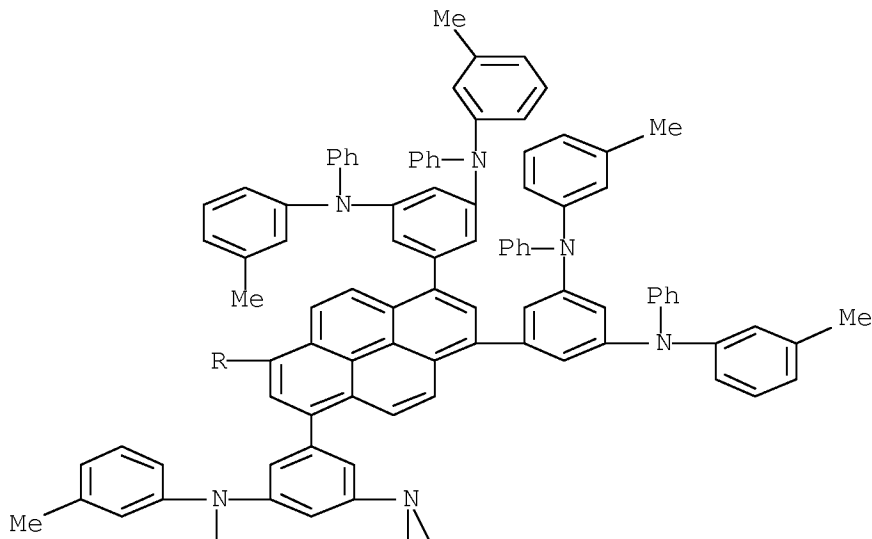
IT 790721-26-5P

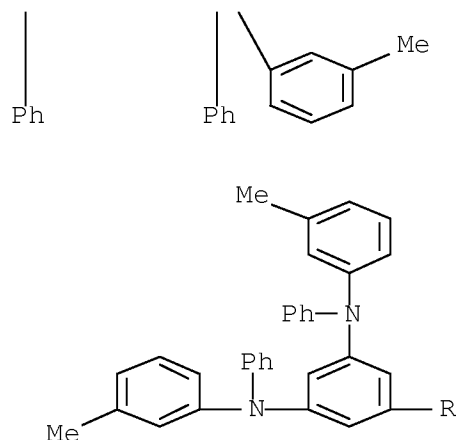
(1,3,6,8-tetrasubstituted pyrene compds., org.  
**electroluminescent** device and org.  
**electroluminescent** display)

RN 790721-26-5 HCA

CN 1,3-Benzenediamine, 5,5',5'',5'''-(1,3,6,8-pyrenetetrayl)tetrakis[N,N'-bis(3-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A





- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST pyrene electroluminescent display device
- IT Luminescent substances  
 (1,3,6,8-tetrasubstituted pyrene compds., org.  
 electroluminescent device and org.  
 electroluminescent display)
- IT Electroluminescent devices  
 (displays; 1,3,6,8-tetrasubstituted pyrene compds., org.  
 electroluminescent device and org.  
 electroluminescent display)
- IT Luminescent screens  
 (electroluminescent; 1,3,6,8-tetrasubstituted pyrene  
 compds., org. electroluminescent device and org.  
 electroluminescent display)
- IT 129-00-0D, Pyrene, derivs.  
 (1,3,6,8-tetrasubstituted pyrene compds., org.  
 electroluminescent device and org.  
 electroluminescent display)
- IT 790721-24-3P 790721-25-4P 790721-26-5P  
 (1,3,6,8-tetrasubstituted pyrene compds., org.  
 electroluminescent device and org.  
 electroluminescent display)
- IT 128-63-2, 1,3,6,8-Tetrabromopyrene 1205-64-7 51067-38-0,  
 4-Phenoxyphenyl boronic acid 63503-60-6, 3-Chlorophenylboronic acid  
 67492-50-6, 3,5-Dichlorophenyl boronic acid  
 (1,3,6,8-tetrasubstituted pyrene compds., org.  
 electroluminescent device and org.)

electroluminescent display)  
 IT 790721-27-6P  
 (1,3,6,8-tetrasubstituted pyrene compds., org.  
 electroluminescent device and org.  
 electroluminescent display)  
 OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)  
 RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

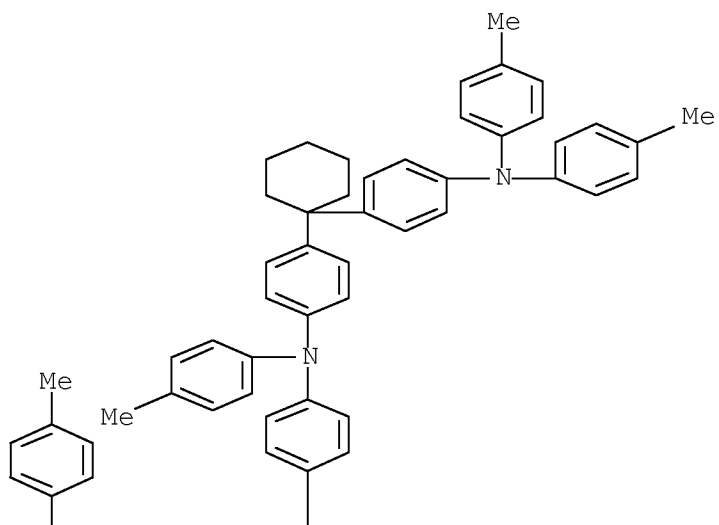
L33 ANSWER 10 OF 22 HCA COPYRIGHT 2010 ACS on STN  
 AN 141:268185 HCA Full-text  
 TI Organic electroluminescent devices  
 IN Hayoz, Pascal; Schaefer, Thomas; Bardon, Kristina  
 PA Ciba Specialty Chemicals Holding Inc., Switz.  
 SO PCT Int. Appl., 38 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	WO 2004077885	A2	20040910	WO 2004-EP50146	20040218
	WO 2004077885	A3	20060706		
	CN 1867646	A	20061122	CN 2004-80005231	20040218
	JP 2007527361	T	20070927	JP 2006-502033	20040218
	US 20060135766	A1	20060622	US 2005-546683	20050823
	US 20090102373	A1	20090423	US 2008-316720	20081216
PRAI	EP 2003-100501	A	20030228		
	EP 2003-102360	A	20030730		
	WO 2004-EP50146	W	20040218		
	US 2005-546683	B1	20050823		

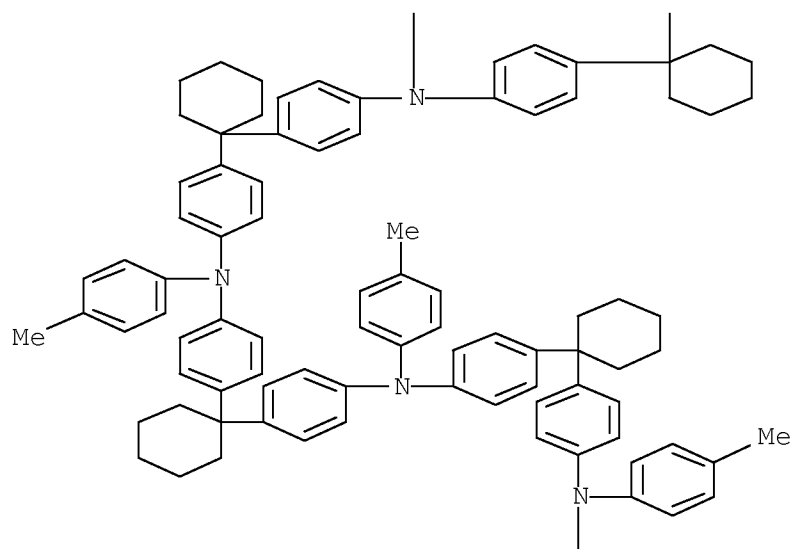
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

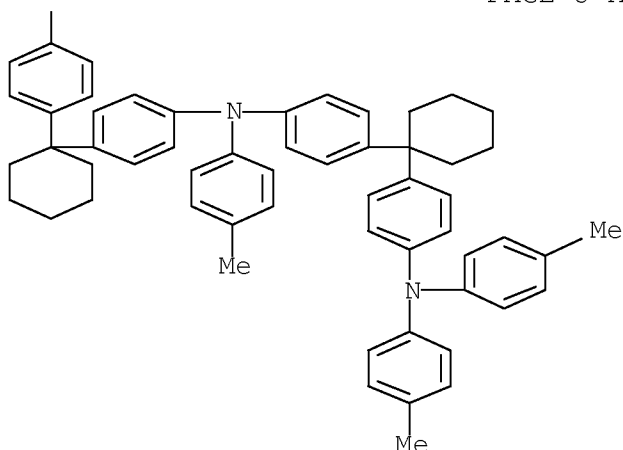
OS MARPAT 141:268185  
 AB The present invention relates to electroluminescent devices which comprise  
 org. light-emitting layers that contain triazine derivs. The triazine  
 compds. are suitable components of blue-emitting, durable, organo-  
 electroluminescent layers. The electroluminescent devices may be employed  
 for full color display panels, for example, mobile phones, televisions and  
 personal computer screens.  
 IT 754980-67-1  
 (org. electroluminescent devices)  
 RN 754980-67-1 HCA  
 CN Benzenamine, 4,4'-cyclohexylidenebis[N-[4-[1-[4-[[4-[1-[4-[[4-[1-[4-  
 [bis(4-methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-  
 methylphenyl)amino]phenyl]cyclohexyl]phenyl](4-  
 methylphenyl)amino]phenyl]cyclohexyl]phenyl]-N-(4-methylphenyl)- (9CI)  
 (CA INDEX NAME)

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PAGE 2-A





CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 76

ST triazine deriv org **electroluminescent** device

IT **Electroluminescent** devices  
 Glass substrates  
 (org. **electroluminescent** devices)

IT Polycarbonates, properties  
 (org. **electroluminescent** devices)

IT 58473-78-2 93555-65-8 151026-65-2 188049-37-8 188049-39-0  
 754980-63-7 754980-64-8 754980-65-9 754980-66-0  
 754980-67-1  
 (org. **electroluminescent** devices)

IT 517-51-1 1047-16-1 1450-63-1 51325-91-8 99762-78-4  
 144810-07-1 210485-42-0  
 (org. **electroluminescent** devices)

IT 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 1499-10-1 2085-33-8  
 11099-20-0 37271-44-6 50926-11-9, ITO 58280-31-2 58328-31-7  
 65181-78-4 123847-85-8 124729-98-2 146162-64-3 157682-41-2  
 166444-98-0 188049-36-7  
 (org. **electroluminescent** devices)

IT 754980-61-5P  
 (org. **electroluminescent** devices)

IT 106-37-6, 1,4-Dibromobenzene 108-77-0, 2,4,6-Trichlorotriazine  
 5122-94-1, 4-Biphenylboronic acid 30363-03-2 754980-62-6  
 (org. **electroluminescent** devices)

OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 11 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 139:388585 HCA [Full-text](#)

TI Static induction transistors made of electroconductive polymer such as

dendrimer  
 IN Yamahara, Motohiro; Fujii, Akiyoshi  
 PA Sharp Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 29 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003324203	A	20031114	JP 2002-129161	20020430
PRAI	JP 2002-129161		20020430		

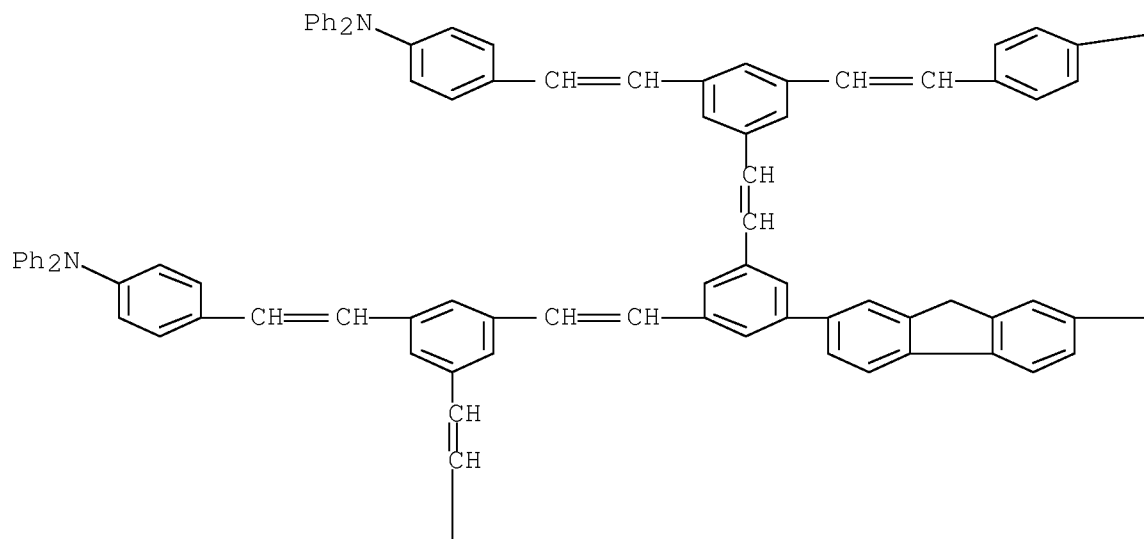
AB The invention relates to a static induction transistors having a semiconductor layer between a first electrode and a second electrode, wherein the semiconductor layer contains a highly branched polymer such as a dendrimer. The transistor shows the improved quality.

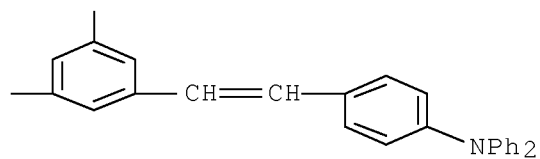
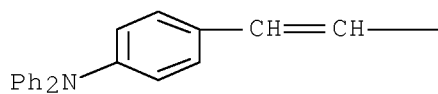
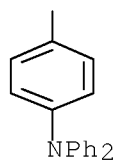
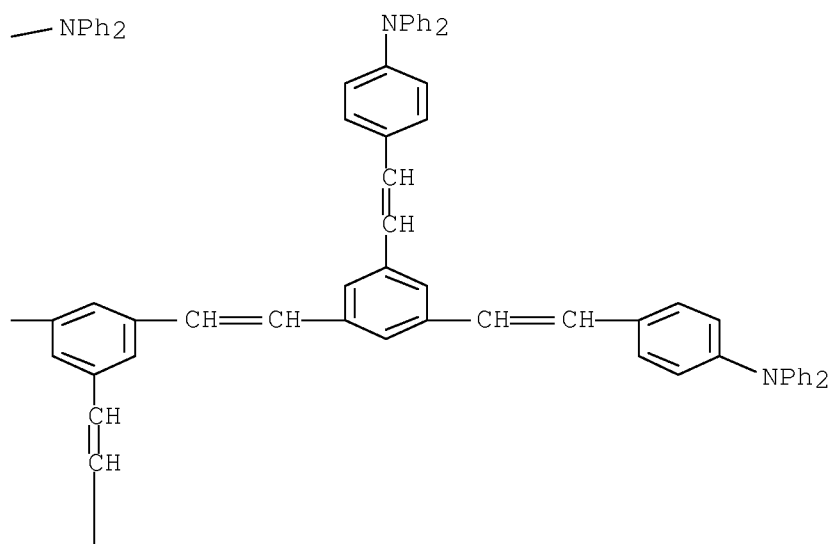
IT 623941-79-7 623941-80-0  
 (semiconductor layer of static Induction transistor)

RN 623941-79-7 HCA

CN Benzenamine, 4,4',4'',4''',4''''',4''''''',4''''''''',4'''''''''''-[9H-fluorene-2,7-diylbis[5,1,3-benzenetriylbis(2,1-ethenediyl-5,1,3-benzenetriyldi-2,1-ethenediyl)]]octakis[N,N-diphenyl- (9CI) (CA INDEX NAME)

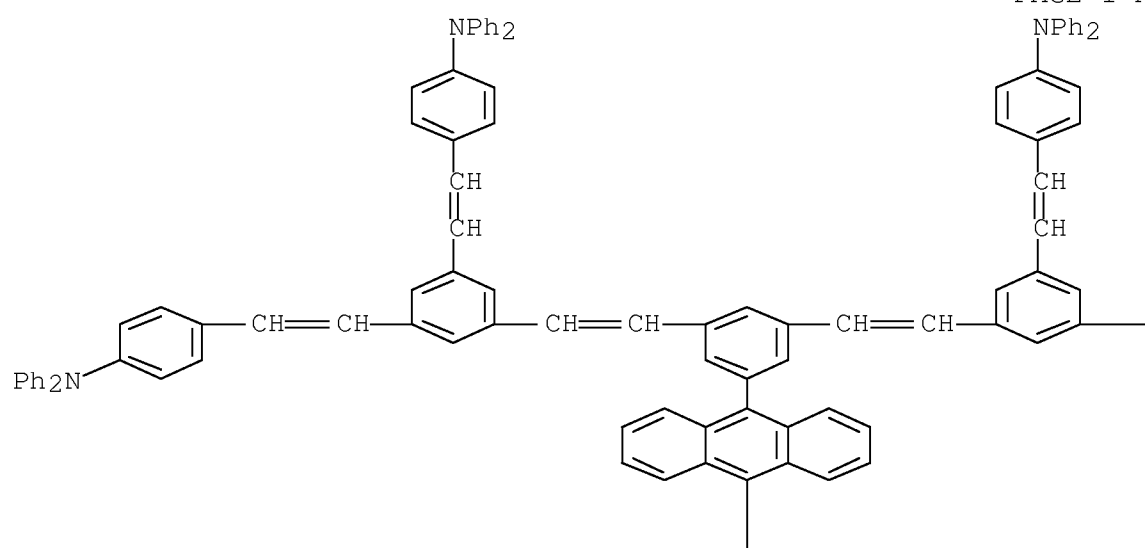
PAGE 1-A



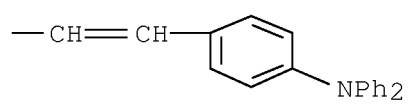


RN 623941-80-0 HCA  
 CN Benzenamine, 4,4',4'',4''',4'''',4''''',4''''',4''''''-[9,10-anthracenediylbis[5,1,3-benzenetriylbis(2,1-ethenediyl-5,1,3-benzenetriyldi-2,1-ethenediyl)]]octakis[N,N-diphenyl- (9CI) (CA INDEX NAME)

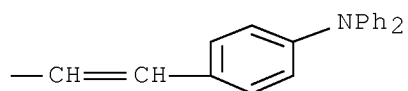
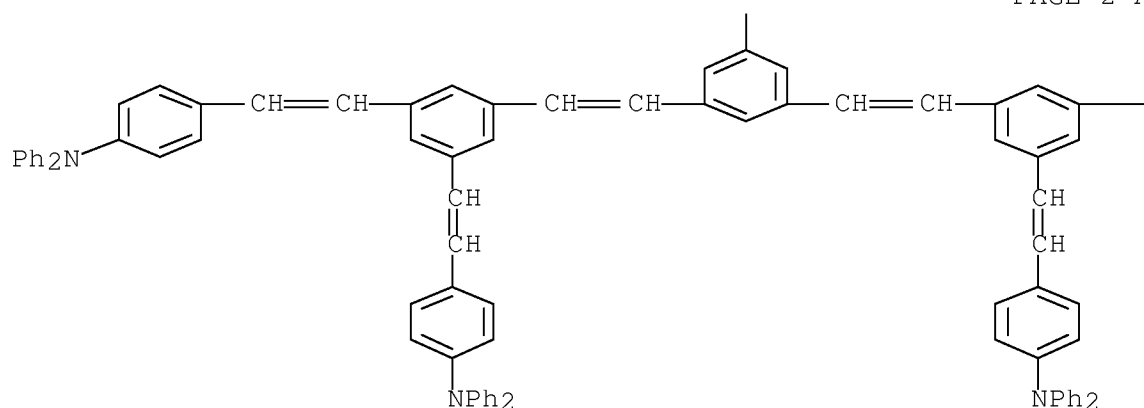
PAGE 1-A



PAGE 1-B







CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 76

IT **Electroluminescent** devices  
 (displays; static Induction transistors made of electroconductive dendrimers)

IT Luminescent screens  
 (**electroluminescent**; static Induction transistors made of electroconductive dendrimers)

IT 623941-79-7 623941-80-0 624734-90-3 624734-92-5  
 (semiconductor layer of static Induction transistor)

L33 ANSWER 12 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 138:376130 HCA Full-text

TI Organic **electroluminescent** device with tetraaryl methane or tetraaryl silane

IN Suzuki, Koichi; Ueno, Kazunori; Saito, Akito

PA Canon Inc., Japan

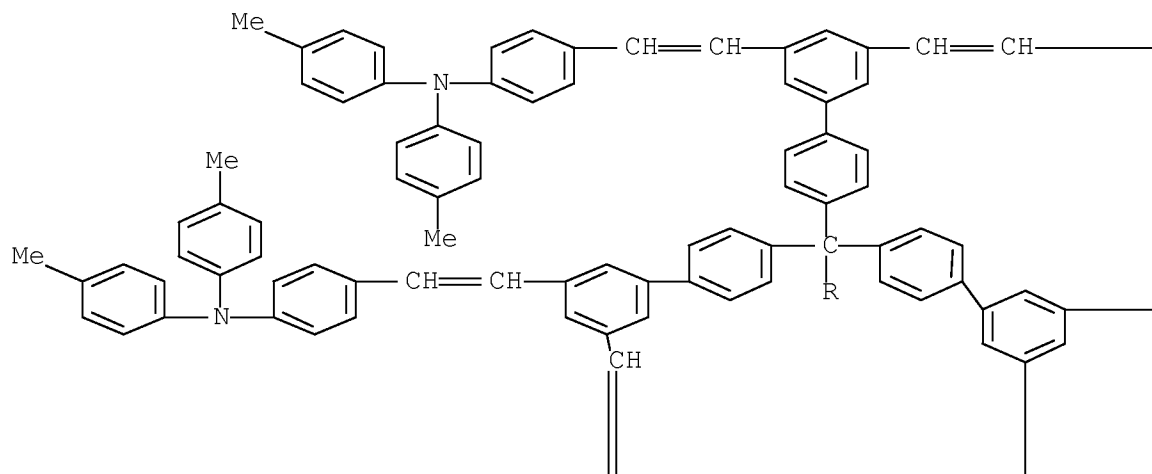
SO Jpn. Kokai Tokkyo Koho, 27 pp.  
 CODEN: JKXXAF

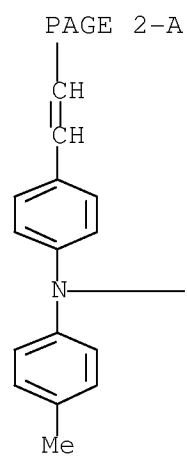
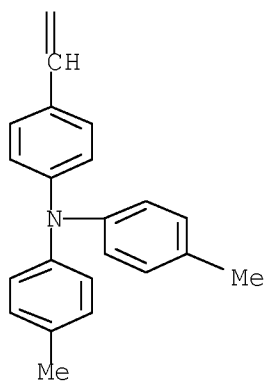
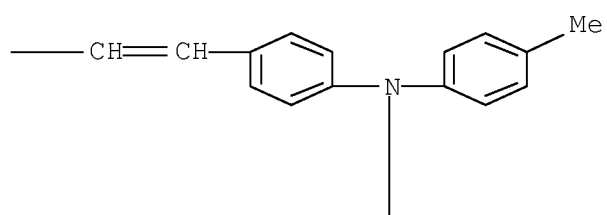
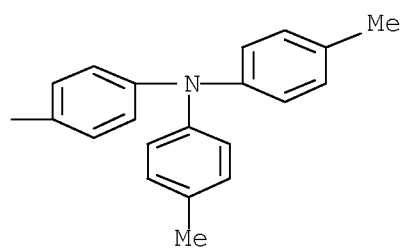
DT Patent

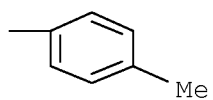
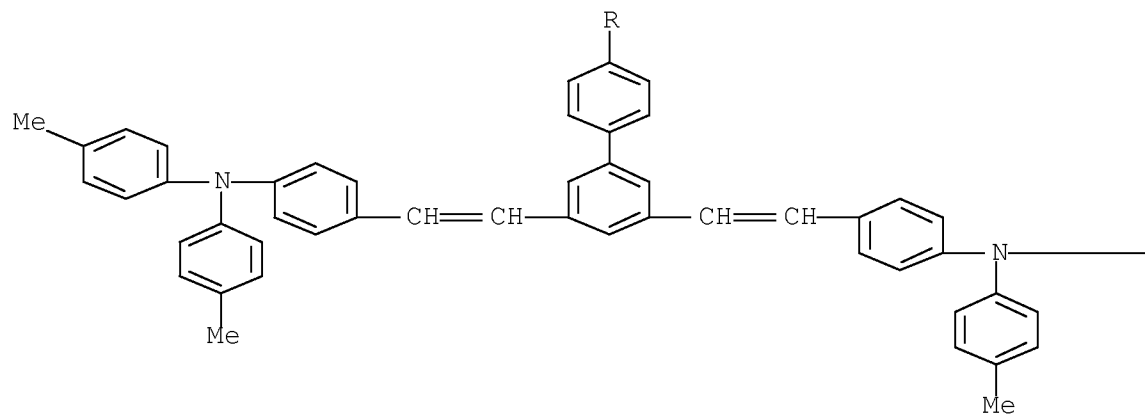
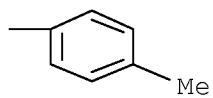
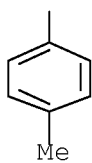
LA Japanese

FAN.CNT 1

PAGE 1-A

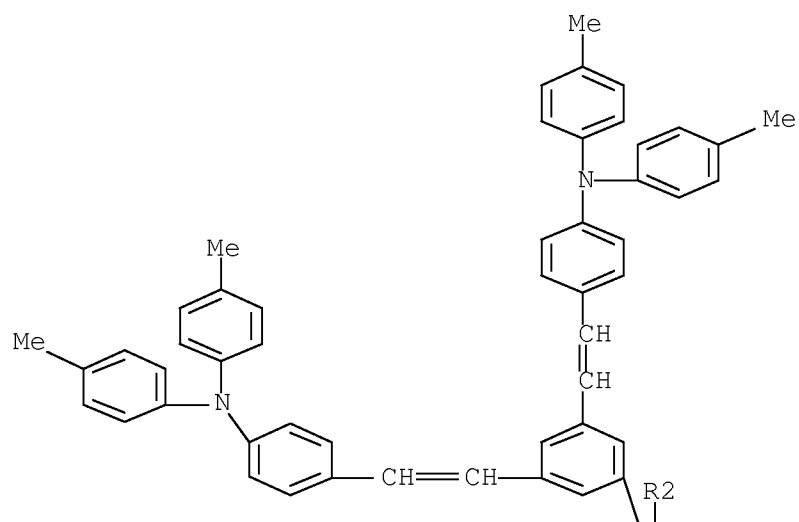




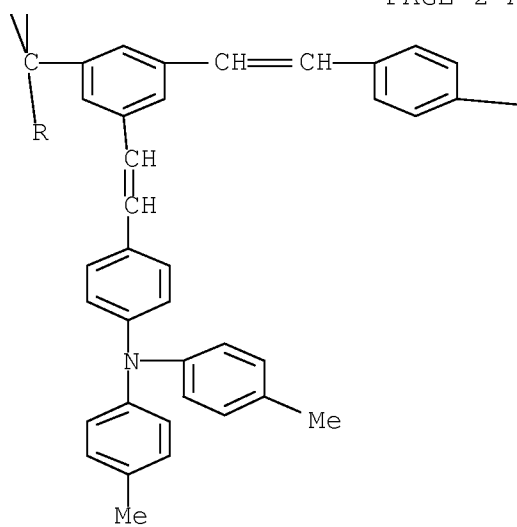


CN Benzenamine, 4,4',4'',4''',4''''',4''''''',4''''''''',4'''''''''''-  
[methanetetrayltetrakis(5,1,3-benzenetriyl)di-2,1-  
ethenediyl]octakis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

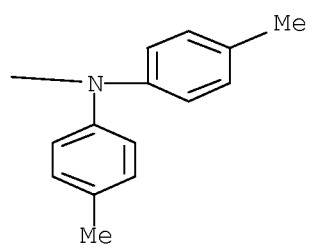
PAGE 1-A



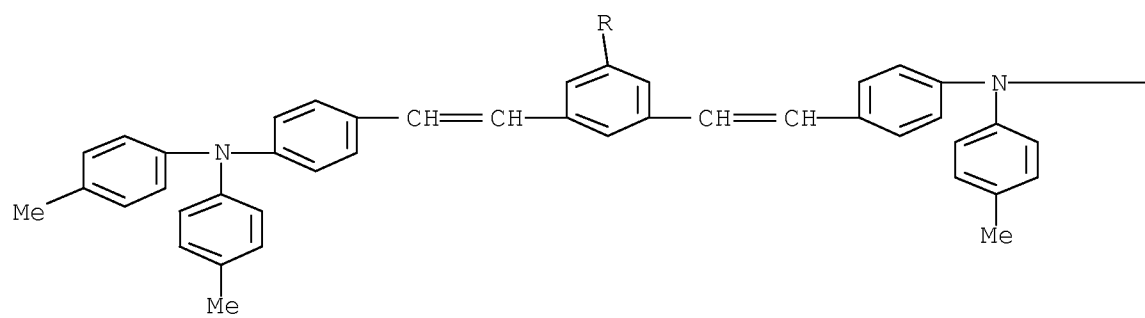
PAGE 2-A



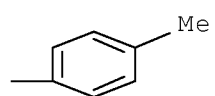
PAGE 2-B

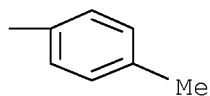
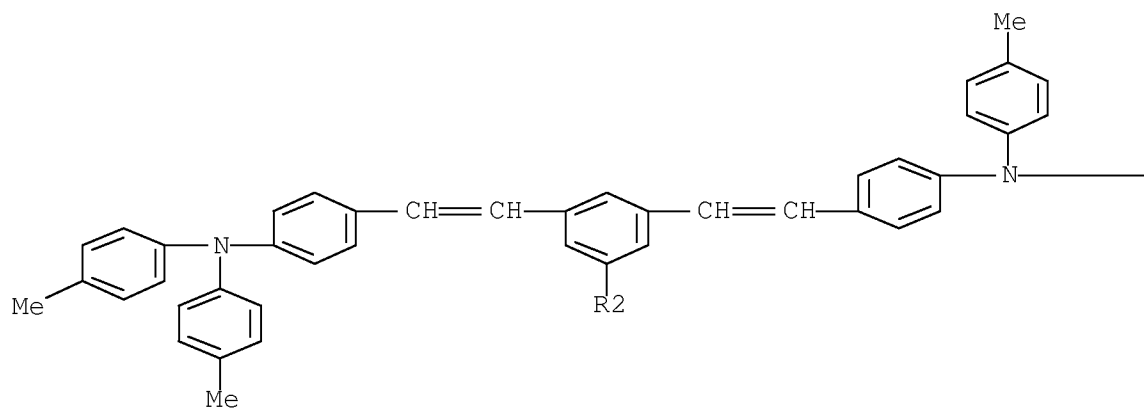


PAGE 3-A



PAGE 3-B





CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device tetraaryl silane methane

IT **Electroluminescent** devices  
 (org. **electroluminescent** device with tetraaryl methane or tetraaryl silane)

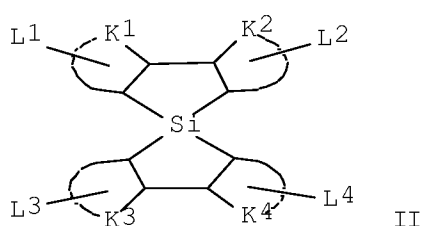
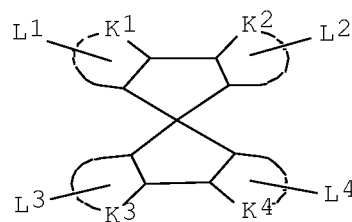
IT	288105-05-5	522665-89-0	522665-90-3	522665-91-4	522665-92-5
	<del>522665-93-6</del>	522665-94-7	522665-95-8	522665-96-9	
	522665-97-0	522665-98-1	522665-99-2	522666-00-8	
	<del>522666-01-9</del>	522666-02-0	522666-03-1	522666-04-2	
	522666-05-3	522666-06-4	522666-07-5	522666-08-6	522666-09-7
	522666-10-0	522666-11-1	522666-12-2	522666-13-3	522666-14-4
	522666-15-5	522666-16-6	522666-17-7	522666-18-8	522666-19-9
	522666-20-2	522666-21-3	522666-22-4	522666-23-5	

(org. **electroluminescent** device with tetraaryl methane or tetraaryl silane)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

AN 138:245328 HCA Full-text  
 TI Organic luminescence device  
 IN Suzuki, Koichi; Senoo, Akihiro; Ueno, Kazunori  
 PA Canon Kabushiki Kaisha, Japan  
 SO PCT Int. Appl., 84 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2003020847	A1	20030313	WO 2002-JP8803	20020830
	JP 2003077670	A	20030314	JP 2001-265871	20010903
	JP 2003115386	A	20030418	JP 2001-306084	20011002
	JP 4136352	B2	20080820		
	AU 2002329056	A1	20030318	AU 2002-329056	20020830
	US 20030235713	A1	20031225	US 2003-385461	20030312
	US 6916555	B2	20050712		
PRAI	JP 2001-265871	A	20010903		
	JP 2001-306084	A	20011002		
	WO 2002-JP8803	W	20020830		
OS	MARPAT 138:245328				
GI					



AB Org. **light-emitting** devices which comprise  $\geq 1$  org. layers between an anode and a cathode are described in which  $\geq 1$  of the org. layers is formed from a spiro compd. described by the general formula I or II (H1-4 = independently selected (un)substituted arom. or (un)substituted heterocyclic rings, with the restriction that  $\geq 1$  of K1-4 = a heterocyclic ring contg.  $\geq 1$  nitrogen atom; and L1-4 = independently selected H or other substituents).

IT 501664-19-3 501664-37-5  
 (org. **light-emitting** devices with spiro compd.-contg. layers)

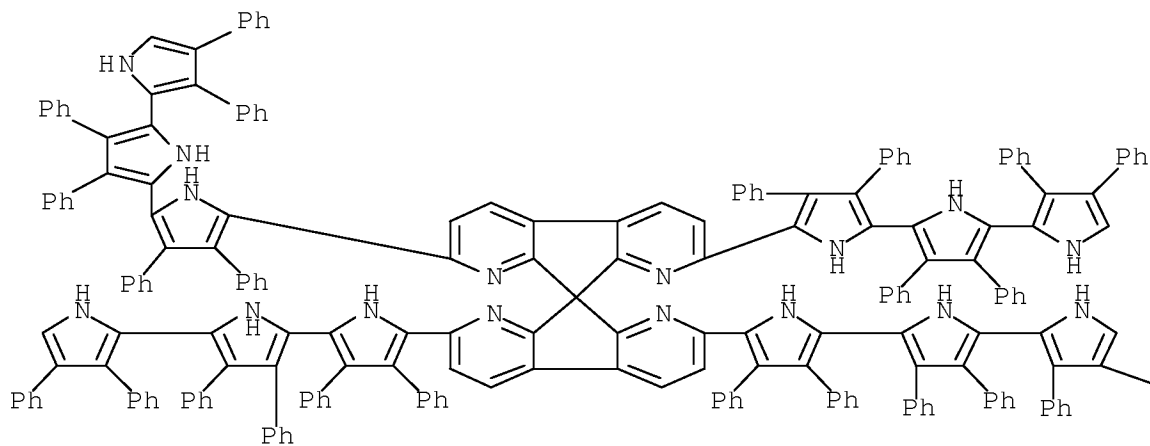
RN 501664-19-3 HCA

CN 9,9'-Spirobi[9H-cyclopenta[1,2-b:4,3-b']dipyridine],



2,2',7,7'-tetrakis(3,3',3'',4,4',4''-hexaphenyl[2,2':5',2''-ter-1H-pyrrol]-5-yl)- (9CI) (CA INDEX NAME)

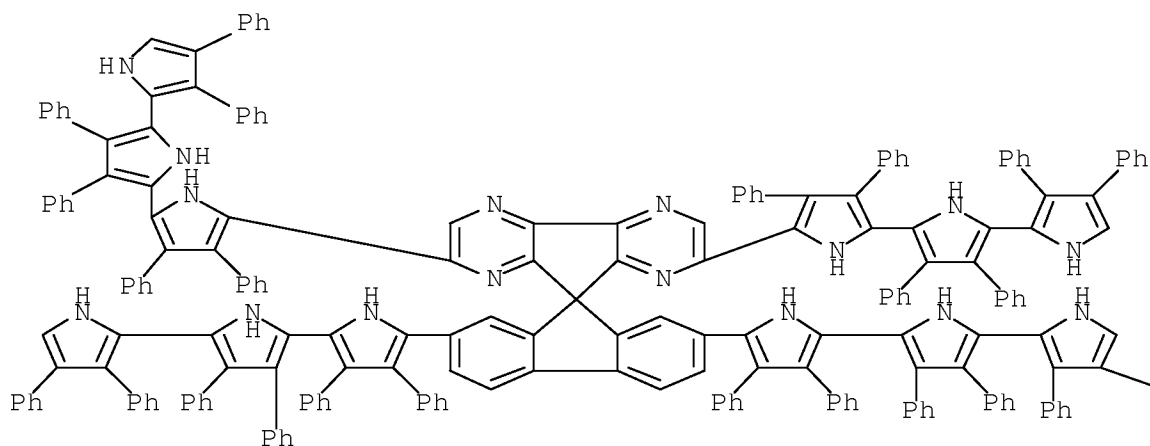
PAGE 1-A



PAGE 1-B

—Ph

RN 501664-37-5 HCA  
 CN Spiro[9H-cyclopenta[1,2-b:3,4-b']dipyrazine-9,9'-[9H]fluorene],  
 2,2',7,7'-tetrakis(3,3',3'',4,4',4''-hexaphenyl[2,2':5',2''-ter-1H-pyrrol]-5-yl)- (9CI) (CA INDEX NAME)



IPCI C09K0011-06 [ICM,7]  
 IPCR C08G0061-00 [I,C\*]; C08G0061-02 [I,A]; C08G0061-12 [I,A]; C09K0011-06  
 [I,C\*]; C09K0011-06 [I,A]; H01L0051-00 [I,C\*]; H01L0051-00 [I,A];  
 H01L0051-05 [I,C\*]; H01L0051-30 [I,A]; H01L0051-50 [N,C\*]; H01L0051-50  
 [N,A]; H05B0033-14 [I,C\*]; H05B0033-14 [I,A]  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
 Properties)  
 Section cross-reference(s): 28, 76  
 ST silicon spiro compd layer org light emitting  
 device; org light emitting device spiro compd  
 layer  
 IT Spiro compounds  
 (org. light-emitting devices with spiro

compd.-contg. layers)  
IT **Electroluminescent** devices  
(org.; org. **light-emitting** devices with spiro  
compd.-contg. layers)  
IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 25067-59-8,  
Polyvinylcarbazole 501664-13-7 501664-14-8 501664-15-9  
501664-16-0 501664-17-1 501664-18-2 ~~501664-19-3~~  
501664-20-6 501664-21-7 501664-22-8 501664-23-9 501664-24-0  
501664-25-1 501664-26-2 501664-27-3 501664-28-4 501664-29-5  
501664-30-8 501664-31-9 501664-32-0 501664-33-1 501664-34-2  
501664-35-3 501664-36-4 ~~501664-37-5~~ 501664-38-6  
501664-39-7 501664-40-0 501664-41-1 501664-42-2 501664-43-3  
501664-44-4 501664-45-5 501664-46-6 501664-47-7 501664-48-8  
501664-49-9 501664-50-2 501664-51-3 501664-52-4 501664-53-5  
501664-54-6 501664-55-7 501664-56-8 501664-57-9 501664-58-0  
501664-59-1 501664-60-4 501927-45-3 501928-66-1 501928-78-5  
501928-79-6 501930-14-9 501930-33-2 501930-51-4 501930-53-6  
501930-57-0 501930-61-6 501930-63-8 501930-64-9 501930-65-0  
501930-75-2 501930-78-5 501930-93-4  
(org. **light-emitting** devices with spiro  
compd.-contg. layers)  
OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)  
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 14 OF 22 HCA COPYRIGHT 2010 ACS on STN  
AN 134:57071 HCA Full-text  
TI Synthesis of hole-transporting hydrazone dendrimers  
AU Nam, Haehyun; Kang, Dae Ho; Kim, Jai Kyeong; Park, Soo Young  
CS School of Material Science and Engineering, Seoul National University,  
Seoul, 151-742, S. Korea  
SO Chemistry Letters (~~2000~~), (11), 1298-1299  
CODEN: CMLTAG; ISSN: 0366-7022  
PB Chemical Society of Japan  
DT Journal  
LA English  
AB Hole-transporting arom. hydrazone dendrimers were synthesized by the  
convergent method through repeated protecting of the hydrazine group by  
phthalic anhydride and Vilsmeier-Haack formylation of the arom. ring.  
Structures of dendrimers were characterized by NMR, IR, GC/MS (FAB+), and  
elemental anal. The arom. hydrazone dendrimers are very sol. in  
chlorobenzene, chloroform, and DMF, in contrast to the rather limited soly.  
of linear hydrazone mols. The dendrimer films are clear, transparent,  
homogeneous, and mech. tough; for the second generation dendrimer (G2) Tg is  
164°, however that of the G1 compd. was not detected by DSC. The HOMO to  
LUMO excitation energy for G1 and G2 is 2.8 eV and 2.5 eV, resp. and the  
red-shifted absorption of G2 over that of G1 suggests that the dendritic  
structure provides partial conjugation of hydrazone branches. According to  
this conjugation effect, the ionization potential (IP) of G2 is higher than  
that of G1 by 0.1 eV. The hole transport properties of the dendrimers were  
measured using a multilayer ~~EL~~ structure of ITO/dendrimer/Alq3/Al [Alq3 =

Tris-(8-hydroxyquinoline)aluminum]. The quantum efficiency and luminance of the dendrimers are higher than, or at least comparable to those of PVK.

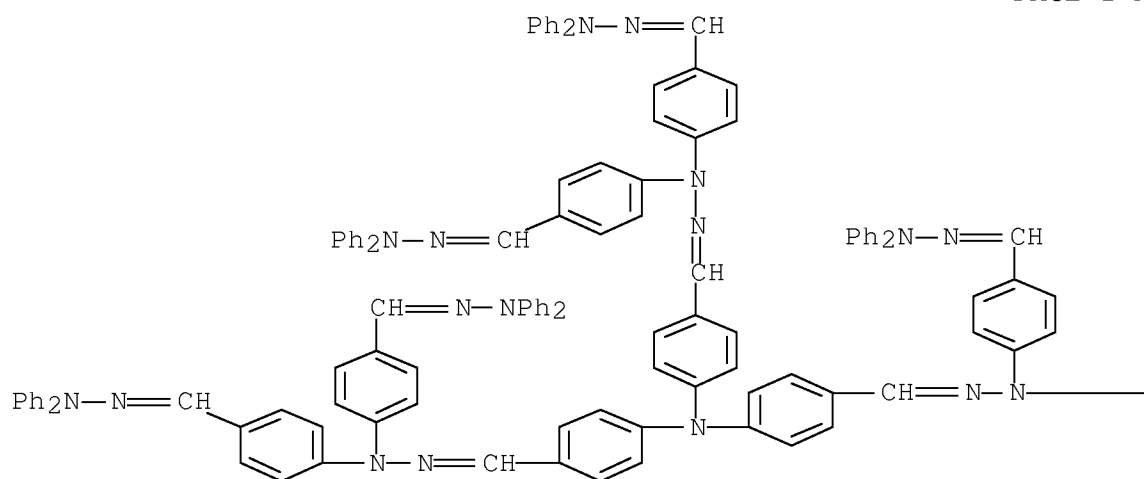
IT 313674-30-5P

(G2 dendrimer; prepn. and structure and luminescence of hole-transporting hydrazone dendrimers via convergent formylation)

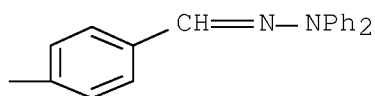
RN 313674-30-5 HCA

CN Benzaldehyde, 4,4',4''-nitritotris-, tris[bis[4-[(diphenylhydrazono)methyl]phenyl]hydrazone] (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 35-7 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 36, 73

IT 313674-30-5P

(G2 dendrimer; prepn. and structure and luminescence of  
hole-transporting hydrazone dendrimers via convergent formylation)

OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 15 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 132:115023 HCA Full-text

TI Amorphous molecular materials for optoelectronic devices and process  
for producing the same

IN Oldham, Warren, Jr.

PA Fed Corporation, USA

SO PCT Int. Appl., 32 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2000003565	A1	20000120	WO 1999-US15437	19990709
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PRAI US 1998-92418P	P	19980710		
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OS MARPAT 132:115023

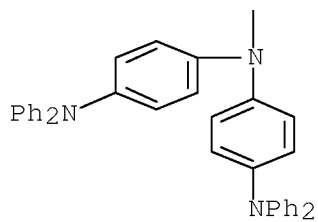
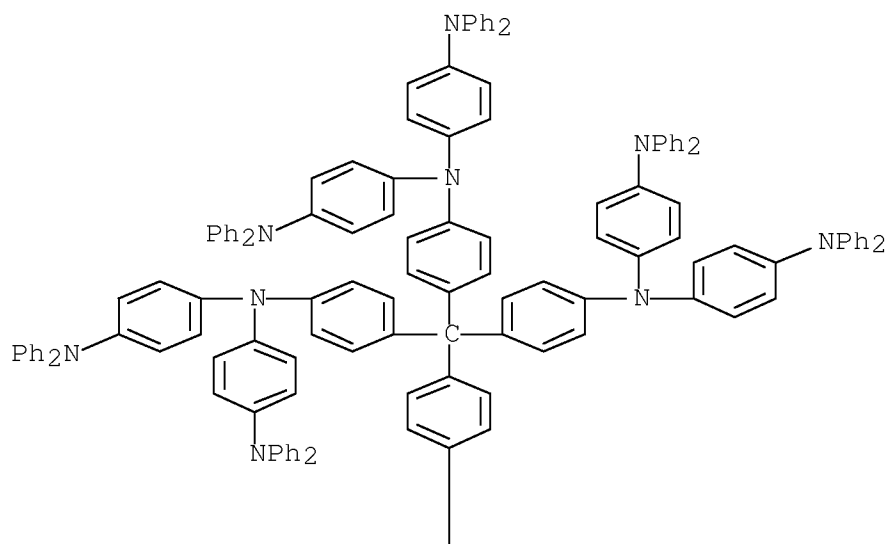
AB Org. ~~light-emitting~~ devices comprising a first electrode, a second  
electrode, and an org. stack interposed between the first electrode and the  
second electrode, are described in which the org. stack further comprises  $\geq 1$   
org. layer (esp. a hole-transporting layer) which further comprises org.  
comps. so that the device continues to function in temps. in  $>145^\circ$ . The  
org. layer may comprise org. comps. with tetrahedral core structures (e.g.,  
tetraphenylmethane, tetraphenylsilane, or tetraphenyladamantane),  
tetrahedral core structures contg. arom. side groups, tetrahedral core  
structures contg. arom. amine side groups, sym. tetrahedral core structures,  
sym. tetrahedral core structures contg. arom. side groups, and/or sym.  
tetrahedral core structures contg. arom. amine side groups.

IT 255824-66-9 255824-73-8

(org. ~~light-emitting~~ devices using amorphous  
materials with tetrahedral cores)

RN 255824-66-9 HCA

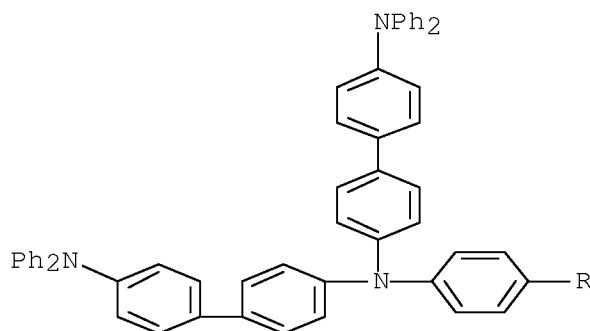
CN 1,4-Benzenediamine, N,N'',N''',N''''-(methanetetrayltetra-4,1-  
phenylene)tetrakis[N-[4-(diphenylamino)phenyl]-N',N'-diphenyl- (9CI)  
(CA INDEX NAME)



RN 255824-73-8 HCA  
 CN [1,1'-Biphenyl]-4,4'-diamine, N,N'',N''',N''''-(methanetetrayltetra-  
 4,1-phenylene)tetrakis[N-[4'-(diphenylamino)[1,1'-biphenyl]-4-yl]-  
 N',N'-diphenyl- (9CI) (CA INDEX NAME)

The chemical structure shows a central carbon atom (C) bonded to an R group and three dendritic arms. The top arm consists of a phenyl ring connected to a nitrogen atom (N), which is further connected to a biphenyl system with a diphenylamino group (NPh<sub>2</sub>) at the para position. The bottom-left arm consists of a phenyl ring connected to a nitrogen atom (N), which is further connected to a biphenyl system with a diphenylamino group (NPh<sub>2</sub>) at the para position. The bottom-right arm consists of a phenyl ring connected to a nitrogen atom (N), which is further connected to a biphenyl system with a diphenylamino group (NPh<sub>2</sub>) at the para position.

Nc1ccc(cc1)-c2ccc(cc2)-c3ccc(cc3)N(c4ccc(cc4)N(c5ccccc5)c6ccccc6)c7ccccc7



IPCI H05B0033-00 [ICM]

IPCR C09K0011-06 [I,C\*]; C09K0011-06 [I,A]; H01L0051-00 [I,C\*]; H01L0051-00 [I,A]; H01L0051-05 [I,C\*]; H01L0051-30 [I,A]; H01L0051-50 [I,C\*]; H01L0051-50 [I,A]; H05B0033-14 [I,C\*]; H05B0033-14 [I,A]

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 76

ST org light emitting device tetrahedral core compd;  
tetraphenylmethane deriv light emitting device;  
tetraphenylsilane deriv light emitting device;  
tetraphenyladamantane deriv light emitting device;  
tetraphenylgermane deriv light emitting device;  
tetraphenylplumbane deriv light emitting device;  
tetraphenylstannane deriv light emitting device

IT Electroluminescent devices

(org. light-emitting devices using amorphous materials with tetrahedral cores)

IT Electroluminescent devices

(org.; org. light-emitting devices using amorphous materials with tetrahedral cores)

IT 595-89-1D, Tetraphenylplumbane, derivs. 595-90-4D, Tetraphenylstannane, derivs. 1048-05-1D, Tetraphenylgermane, derivs. 1048-08-4D, Tetraphenylsilane, derivs. 16004-75-4D, derivs.  
255824-03-4 255824-04-5 255824-05-6 255824-06-7 255824-08-9  
255824-45-4 255824-53-4 255824-54-5 255824-56-7  
255824-66-9 255824-73-8 255904-22-4

(org. light-emitting devices using amorphous materials with tetrahedral cores)

IT 255721-13-2P

(org. light-emitting devices using amorphous materials with tetrahedral cores)

IT 86-74-8, Carbazole 105309-59-9, Tetrakis(4-bromophenyl)methane 134080-67-4, Tetrakis(4-iodophenyl)methane 201338-08-1

(org. light-emitting devices using amorphous materials with tetrahedral cores)

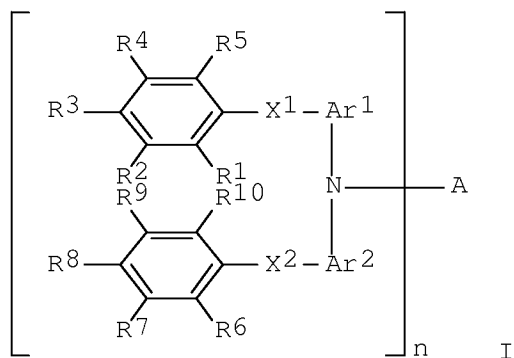
OSC.G 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)



RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L33 ANSWER 16 OF 22 HCA COPYRIGHT 2010 ACS on STN  
AN 130:58899 HCA Full-text  
TI Aromatic amine compound luminescent material and  
~~electroluminescent~~ device with high luminance and luminescent  
efficiency using it  
IN Onikubo, Shunichi; Okutsu, Satoshi; Tamano, Michiko; Enokida, Toshio  
PA Toyo Ink Mfg. Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 36 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 10302960	A	19981113	JP 1997-112088	19970430
	JP 3498533	B2	20040216		
PRAI	JP 1997-112088		19970430		
OS	MARPAT 130:58899				
GI					



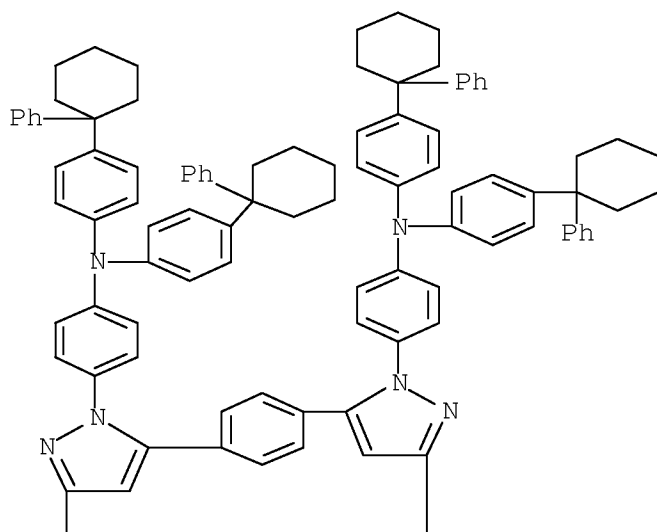
AB The title material comprises an arom. amine compd. described by the general formula I [n = 3-15; A = group contg. (un)substituted (condensed) arom. or heterocyclic arom. group; A ≠ Q; Ar1-2 = (un)substituted (condensed) arom. group; X1-2 = O, S, CO, SO2, CxH2xOCyH2y; (un)substituted C1-20 alkylidene, alkylene, (un)substituted divalent alicyclic group; x, y = 0-20; x + y ≠ 0; R1-10 = H, halo, (un)substituted alkyl, alkoxy, arom. group, heterocyclic arom. group, amino; R1-5 or R6-10 may form ring]. The device has a ~~light-emitting~~ layer contg. I. The device showed high luminance and luminescent efficiency and long lifetime.

IT 216975-24-5  
(arom. amine-based emitting materials for

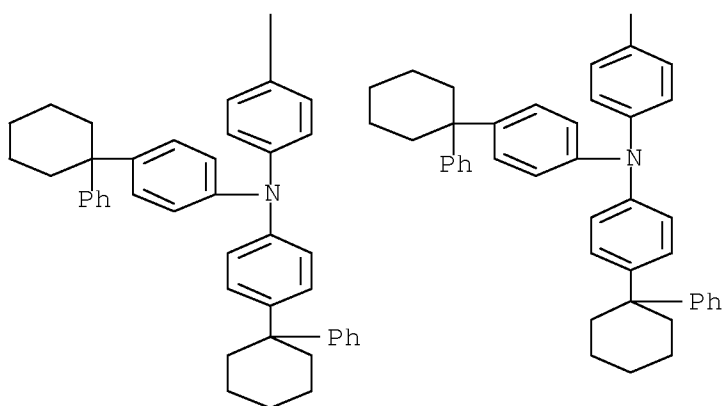
electroluminescent devices)

RN 216975-24-5 HCA  
CN Benzenamine, 4,4',4'',4'''-(1,4-phenylenedi-1H-pyrazole-5,1,3-triyl)tetrakis[N,N-bis[4-(1-phenylcyclohexyl)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IPCI H05B0033-14 [ICM,6]; C09K0011-06 [ICS,6]  
IPCR H05B0033-14 [I,C\*]; H05B0033-14 [I,A]; C09K0011-06 [I,C\*]; C09K0011-06 [I,A]; H01L0051-00 [I,C\*]; H01L0051-00 [I,A]; H01L0051-05 [I,C\*];

H01L0051-30 [I,A]; H01L0051-50 [I,C\*]; H01L0051-50 [I,A]; H05B0033-12 [I,C\*]; H05B0033-12 [I,A]

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 25, 76

ST arom amine **electroluminescent** device high luminance; luminescent efficiency **electroluminescent** device arom amine

IT **Electroluminescent** devices  
(arom. amine-based emitting materials for **electroluminescent** devices)

IT Amines, uses  
(arom.; arom. amine-based emitting materials for **electroluminescent** devices)

IT Phosphors  
(**electroluminescent**; arom. amine-based emitting materials for **electroluminescent** devices)

IT 209165-07-1 209165-09-3 209165-27-5 209165-31-1 216974-92-4  
216974-93-5 216974-94-6 216974-95-7 216974-97-9 216974-99-1  
216975-00-7 216975-02-9 216975-03-0 216975-05-2 216975-07-4  
216975-09-6 216975-11-0 216975-13-2 216975-17-6 216975-19-8  
216975-21-2 216975-22-3 216975-23-4 ~~216975-24-5~~  
216975-25-6 216975-26-7 216975-27-8 216975-28-9 216975-29-0  
216975-30-3 216975-31-4 216975-32-5 217086-74-3 217086-98-1  
217087-26-8 217087-30-4 217087-34-8  
(arom. amine-based emitting materials for **electroluminescent** devices)

IT 216974-91-3  
(arom. amine-based emitting materials for **electroluminescent** devices and devices using it)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L33 ANSWER 17 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 129:87816 HCA Full-text

OREF 129:17967a,17970a

TI Material for organoelectroluminescence device and organoelectroluminescence device using the material

IN Tamano, Michiko; Onikubo, Toshikazu; Okutsu, Satoshi; Enokida, Toshio

PA Toyo Ink Manufacturing Co., Ltd., Japan

SO Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 848579	A2	19980617	EP 1997-310157	19971216
	EP 848579	A3	19980902		
	EP 848579	B1	20030326		
	JP 10233287	A	19980902	JP 1997-301457	19971104
	JP 3606025	B2	20050105		
	US 5948941	A	19990907	US 1997-990193	19971212
PRAI	JP 1996-335217	A	19961216		

JP 1997-301457

A

19971104

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 129:87816

AB Compds. suitable for use in **electroluminescent** devices are described by such general formula as I (A= Q, Q1, Q2; Ar1-6 = independently selected (un)substituted aryl groups; X1-6 = independently selected O, S, C:O, SO2, Si(B1)B2, N(B1), PB1, P(:O)B1-, -(CH2)x-O-(CH2)y-, (un)substituted alkylene groups, or (un)substituted alicyclic moieties; B1 and B2 = independently selected (un)substituted alkyl group or a (un)substituted aryl group), etc. The materials may be hole-injecting materials. Devices using the materials, including display devices, are also described, as is the use of the materials in the devices.

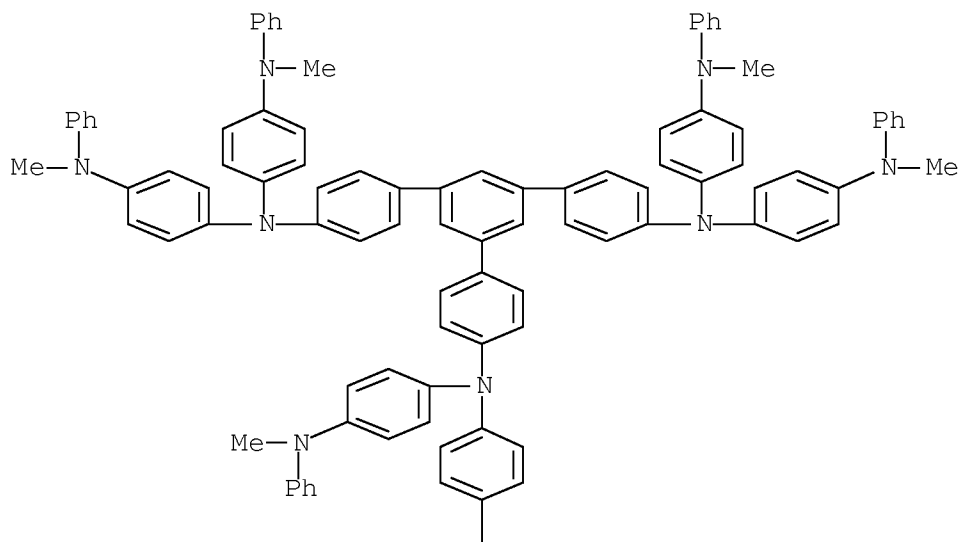
IT 209165-24-2

(materials for org. **electroluminescent** devices based on benzene and triphenylamine derivs. and devices using them)

RN 209165-24-2 HCA

CN [1,1':3',1'''-Terphenyl]-4,4''-diamine,  
5'-[4-[bis[4-(methylphenylamino)phenyl]amino]phenyl]-N,N,N',N'-  
tetrakis[4-(methylphenylamino)phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 74, 76

ST benzene deriv **electroluminescent** material; triphenylamine  
 deriv **electroluminescent** material; display  
**electroluminescent** device org material; hole injecting org  
 material **electroluminescent** device

IT Phosphors  
 (**electroluminescent**; materials for org.  
**electroluminescent** devices based on benzene and  
 triphenylamine derivs. and devices using them)

IT **Electroluminescent** devices  
 (materials for org. **electroluminescent** devices based on  
 benzene and triphenylamine derivs. and devices using them)

IT Polycarbonates, uses  
 (materials for org. **electroluminescent** devices based on  
 benzene and triphenylamine derivs. and devices using them)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 15082-28-7  
 24936-68-3, uses 123847-85-8,  
 4,4'-Bis(N-(1-naphthyl)-N-phenylamino)biphenyl 175395-59-2  
 188049-36-7 209165-05-9 209165-06-0 209165-08-2 209165-10-6  
 209165-12-8 209165-14-0 209165-15-1 209165-16-2 209165-17-3  
 209165-18-4 209165-19-5 209165-20-8 209165-21-9 209165-22-0  
 209165-23-1 ~~209165-24-2~~ 209165-26-4 209165-27-5  
 209165-28-6 209165-29-7 209165-31-1 209165-32-2 209165-34-4  
 (materials for org. **electroluminescent** devices based on  
 benzene and triphenylamine derivs. and devices using them)

IT 209165-07-1P  
 (materials for org. **electroluminescent** devices based on  
 benzene and triphenylamine derivs. and devices using them)

IT 209165-09-3P 209165-25-3P 209165-30-0P  
 (materials for org. **electroluminescent** devices based on  
 benzene and triphenylamine derivs. and devices using them)

IT 80-73-9, 1,3-Dimethyl-2-imidazolidinone 98-95-3, Nitrobenzene,  
 reactions 615-68-9 4316-58-9, Tris(p-bromophenyl)amine  
 10081-67-1 18162-30-6 209165-33-3  
 (materials for org. **electroluminescent** devices based on  
 benzene and triphenylamine derivs. and devices using them)

OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)

L33 ANSWER 18 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 128:173587 HCA Full-text

OREF 128:34101a,34104a

TI A novel class of  $\pi$ -electron dendrimers for thermally and  
 morphologically stable amorphous molecular materials

AU Katsuma, Katsuhiko; Shiota, Yasuhiko

CS Department Applied Chemistry, Faculty Engineering, Osaka University,  
 Suita, 565, Japan

SO Advanced Materials (Weinheim, Germany) (1998), 10(3),

223-226

CODEN: ADVMEW; ISSN: 0935-9648

PB Wiley-VCH Verlag GmbH

DT Journal

LA English

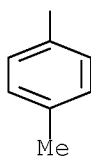
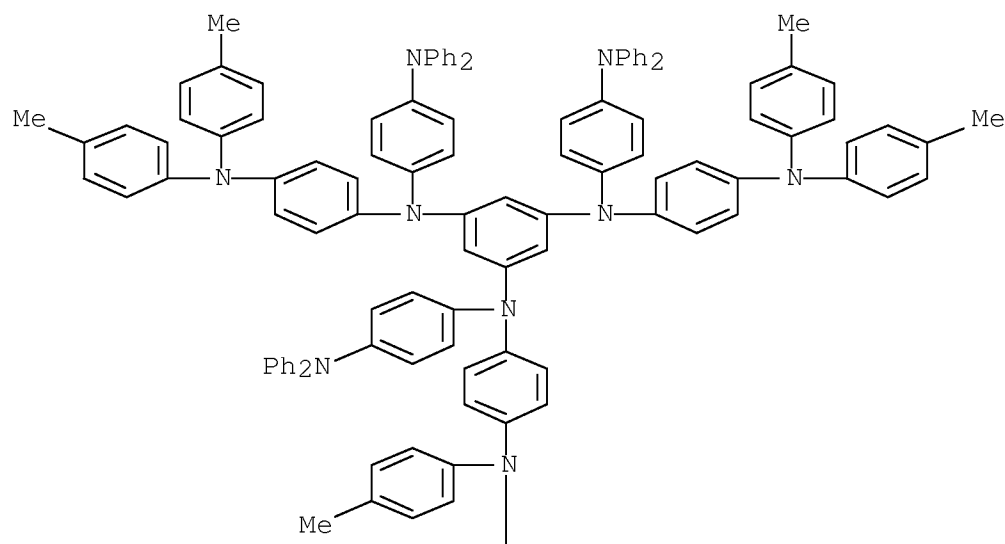
AB The novel org. hyperbranched  $\pi$ -electron systems, 1,3,5-tris[N-(4'-methylbiphenyl-4-yl)-N-(4-diphenylaminophenyl)amino]benzene (TDAB-G1(a)) and 1,3,5-tris{N-[4-bis(4-methylphenyl)aminophenyl]-N-(4-diphenylaminophenyl)amino}benzene (TDAB-G1(b)), were synthesized via the Ullmann reaction and characterized by <sup>1</sup>H-, <sup>13</sup>C-NMR, electron absorption spectroscopy, and elemental anal. TDAB-G1(a) was obtained as a polycryst. material, whereas TDAB-G1(b) was an amorphous glass. DSC anal. of TDAB-G1(a) gave a m.p. of 187°. When the melted sample was cooled in air, a glass was formed spontaneously. Reheating of the glass sample resulted in a glass transition at T<sub>g</sub> = 128° giving a supercooled liq. Likewise, the amorphous repptd. sample of TDAB-G1(b) exhibited a glass transition at T<sub>g</sub> = 134° when heated. Unique multiredox processes involving as many as 6- and 9-electron reversible oxidns. were obsd. in the cyclic voltammograms of TDAB-G1(a) and TDAB-G1(b), resp. TDAB-G1(b) was used as a hole-transport material in a multilayer org. LED consisting of the double-hole transport layer and an emitting layer which contained N,N'-diphenyl-N,N'-bis(3-methylphenyl)-[1,1'-biphenyl]-4,4'-diamine (TPD) doped with rubrene as the emitting material and with tris(8-quinolinolato) Al as the electron transport material. This device emitted yellow light and the electroluminescence showed a peak at 560 nm in agreement with the luminescence peak of rubrene.

IT 874946-05-1P

(A novel class of  $\pi$ -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

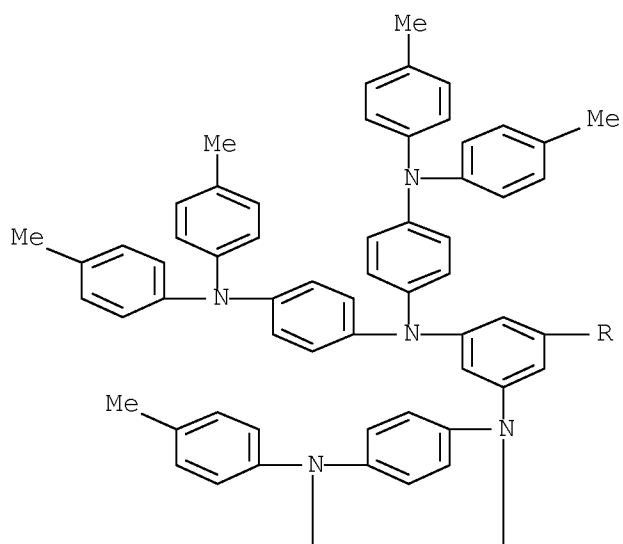
RN 874946-05-1 HCA

CN 1,3,5-Benzenetriamine, N1,N3,N5-tris[4-[bis(4-methylphenyl)amino]phenyl]-N1,N3,N5-tris[4-(diphenylamino)phenyl]-  
(CA INDEX NAME)

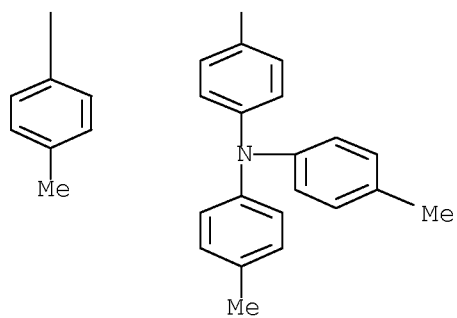


IT 202868-45-9P  
 (prepn., glass transition, redox potential, and application in  
 LED as hole transport material of)  
 RN 202868-45-9 HCA  
 CN 1,3,5-Benzenetriamine, N1,N1,N3,N3,N5,N5-hexakis[4-[bis(4-  
 methylphenyl)amino]phenyl]- (CA INDEX NAME)

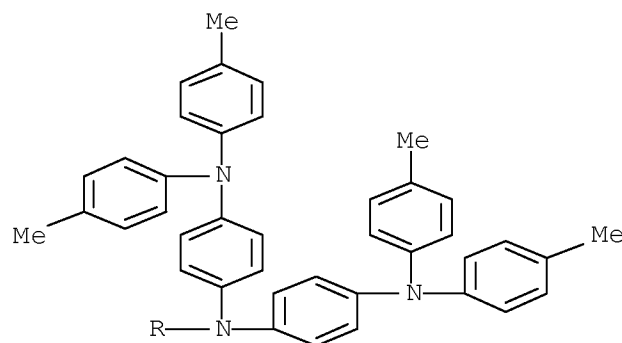
PAGE 1-A



PAGE 2-A







CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25, 72

IT Glass transition  
 (of dendritic phenylaminobenzene derivs. prepd. for LED hole transport materials)

IT Redox potential  
 (of dendritic phenylaminobenzene derivs. prepd. for LED hole transport materials studied by cyclovoltammetry)

IT Electroluminescent devices  
 (prepn. of dendritic phenylaminobenzene derivs. for hole transport)

IT 874946-05-1P  
 (A novel class of  $\pi$ -electron dendrimers for thermally and morphologically stable amorphous molecular materials)

IT 55290-86-3, 4-Iodo-4'-methylbiphenyl 58047-43-1 153521-91-6  
 (prepn. of dendritic phenylaminobenzene derivs. as LED hole transport materials)

IT 202868-44-8P 202868-45-9P  
 (prepn., glass transition, redox potential, and application in LED as hole transport material of)

OSC.G 113 THERE ARE 113 CAPLUS RECORDS THAT CITE THIS RECORD (113 CITINGS)

L33 ANSWER 19 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 128:17237 HCA Full-text

OREF 128:3255a,3258a

TI Organic electroluminescent device elements

IN Enokida, Toshio; Tamano, Michiko

PA Toyo Ink Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 33 pp.

CODEN: JKXXAF

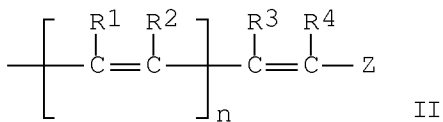
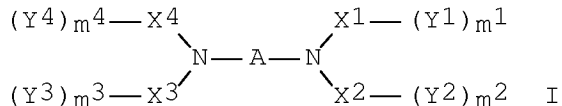
DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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	JP 3564859	B2	20040915
PRAI	JP 1996-78501		19960401
OS	MARPAT 128:17237		
GI			

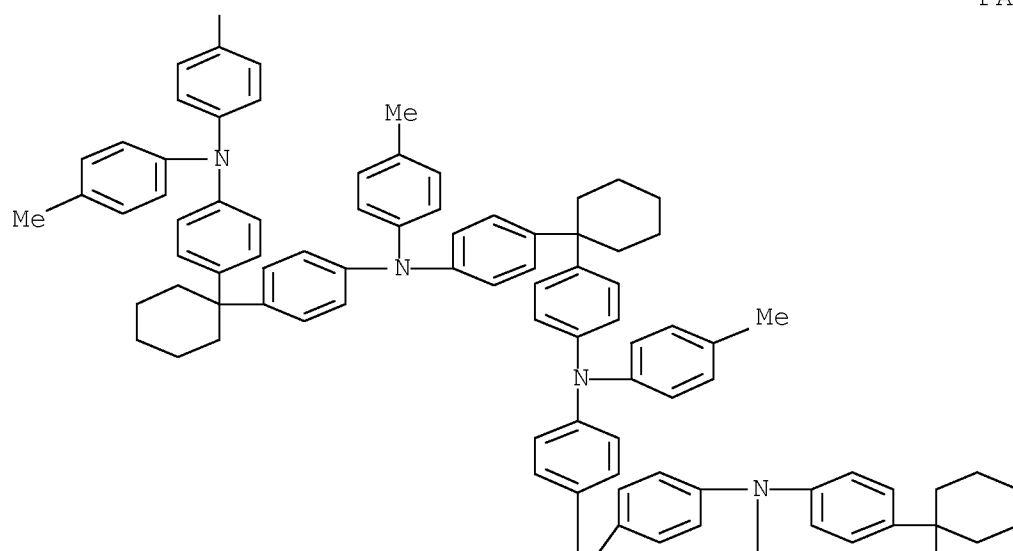
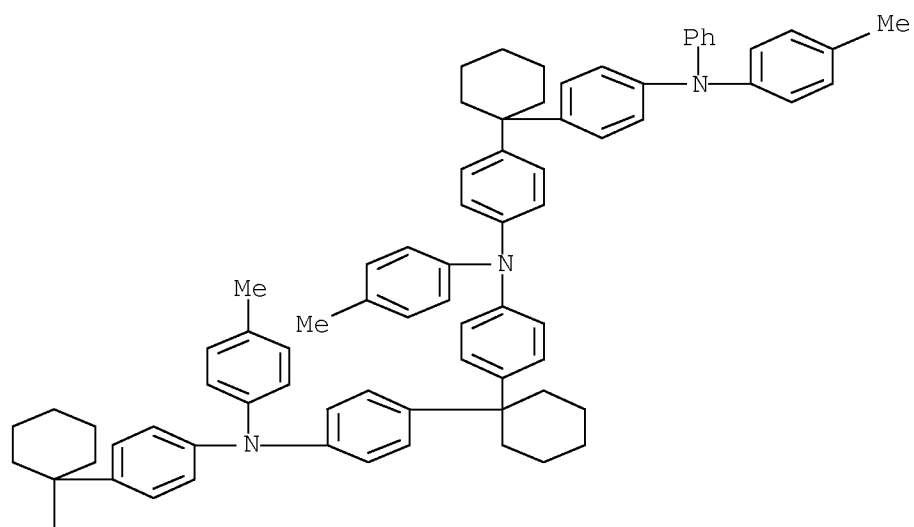


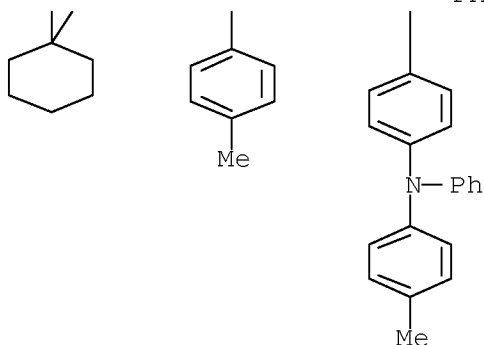
AB The elements comprise the phosphors I contg. II; I [A, X1-4 = C2-20 arylene; m1, m2, m3, m4 = 0-2; Y1-4 = II] II [R1-4 = H, (un)substituted alkyl, (un)substituted aryl, CN; Z = (un)substituted aryl; n = 0, 1]; a tertiary amine deriv. (B1,2N)G(NB3,4) formed between the phosphor and the anode [B1-4 = (un)substituted C6-20 aryl; G = (un)substituted arylene]; and a metal complex Q1,2GaL formed between the phosphor and the cathode [Q1,2 = (un)substituted hydrobenzoquinoline deriv.; L = halo, (un)substituted (cyclo)alkyl, aryl cong. optional (un)substituted N, OR (R  $\equiv$  L)].

IT 189263-95-4  
(org. electroluminescent device elements)

RN 189263-95-4 HCA

CN Benzenamine, 4,4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)phenylamino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]- (9CI) (CA INDEX NAME)

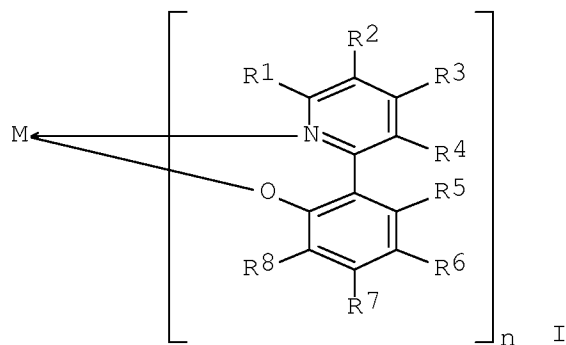




IPCI C09K0011-06 [ICM,6]; H05B0033-14 [ICS,6]  
 IPCR H05B0033-14 [I,C\*]; H05B0033-14 [I,A]; C09K0011-06 [I,C\*]; C09K0011-06 [I,A]; H01L0051-00 [I,C\*]; H01L0051-00 [I,A]; H01L0051-05 [I,C\*]; H01L0051-30 [I,A]; H01L0051-50 [I,C\*]; H01L0051-50 [I,A]  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST **electroluminescent** org phosphor  
 IT Phosphors  
     (**electroluminescent**; org. **electroluminescent** device elements)  
 IT **Electroluminescent** devices  
     (org. **electroluminescent** device elements)  
 IT Metallophthalocyanines  
     Polycarbonates, uses  
     (org. **electroluminescent** device elements)  
 IT 517-51-1 905-62-4 980-26-7 1047-16-1 1499-10-1 2085-33-8  
 7520-01-6 13978-85-3 14642-34-3 15082-28-7 38215-36-0  
 51325-91-8 58361-82-3 58473-78-2 61843-06-9 65181-78-4  
 73276-70-7 99762-78-4 123847-85-8 139255-17-7 143010-15-5  
 146162-54-1 146162-63-2 150405-69-9 151026-65-2 164259-44-3  
 166444-98-0 185505-35-5 186965-89-9 188049-36-7 188049-37-8  
 188049-39-0 188049-41-4 ~~189263-95-4~~ 198903-35-4  
 198903-36-5 198903-37-6 198903-38-7 198903-39-8 198903-40-1  
 198903-41-2 198903-42-3 198903-43-4 198903-44-5 198903-45-6  
 198903-46-7 198903-47-8 198903-48-9 198903-49-0 198903-50-3  
 198903-51-4 198903-52-5 198903-53-6 198903-54-7 198903-55-8  
 198903-56-9 198903-57-0 198903-58-1 198903-59-2 198903-60-5  
 198903-61-6 198903-62-7 198903-63-8 198903-64-9  
     (org. **electroluminescent** device elements)  
 OSC.G 6 THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD (6 CITINGS)  
 L33 ANSWER 20 OF 22 HCA COPYRIGHT 2010 ACS on STN  
 AN 127:168833 HCA Full-text  
 OREF 127:32572h,32573a  
 TI Material for organic **electroluminescent** device  
 IN Enokida, Toshio; Okutsu, Satoshi; Tamano, Michiko

PA Toyo Ink Mfg. Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE -----
PI	JP 09176629	A	19970708	JP 1995-336240	19951225
	JP 3475620	B2	20031208		
PRAI	JP 1995-336240		19951225		
OS	MARPAT 127:168833				
GI					



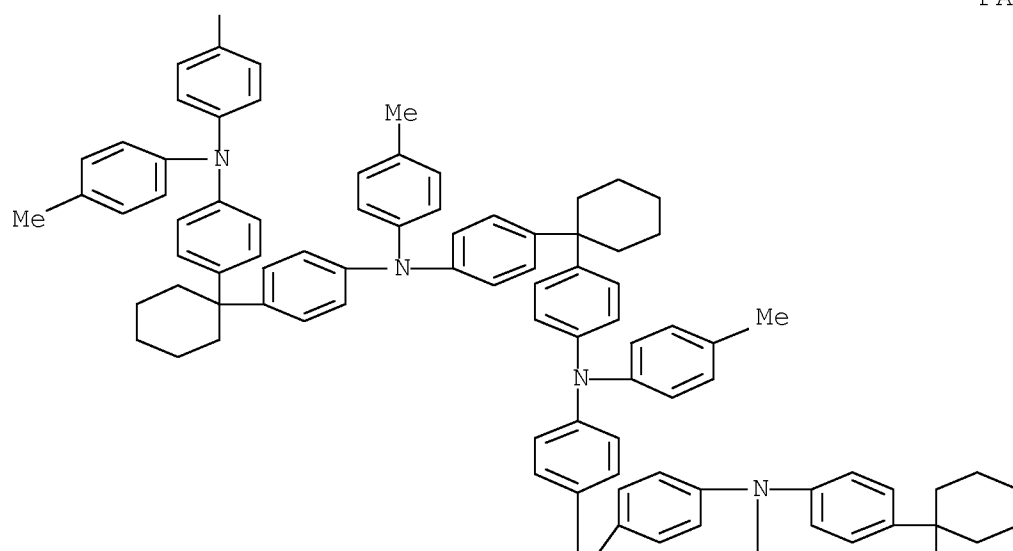
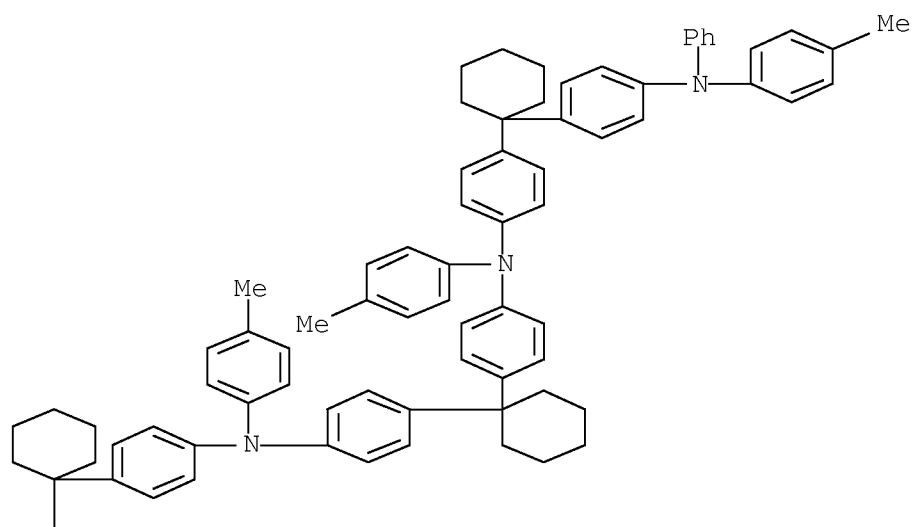
AB The invention relates to a material used for an org. **electroluminescent** device, wherein the **light-emitting** layer contains the compd. represented by I [ R1-8 = H, halo, alkyl, alkoxy, aryl etc.; R1-4 and R5-8 may form a N-contg. arom. ring with neighboring groups; M = di or tri valent metal; n = 2 or 3].

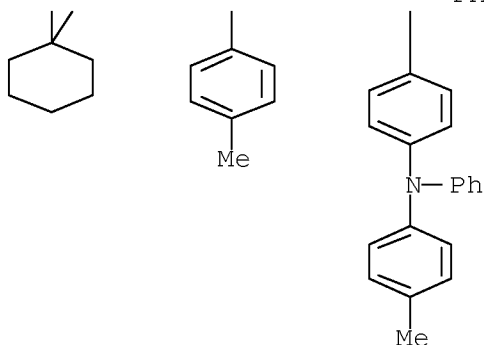
IT 189263-95-4

(material for org. **electroluminescent** device)

RN 189263-95-4 HCA

CN Benzenamine, 4,4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)phenylamino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]- (9CI) (CA INDEX NAME)





IPCI C09K0011-06 [ICM,6]

IPCR C09K0011-06 [I,C\*]; C09K0011-06 [I,A]; H05B0033-14 [I,C\*]; H05B0033-14 [I,A]

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device metal complex

IT **Electroluminescent** devices

Fluorescent substances

(material for org. **electroluminescent** device)

IT 1499-10-1 5862-38-4 27310-62-9 51325-91-8 123847-85-8  
 188049-36-7 ~~189263-95-4~~ 193622-08-1 193622-09-2  
 193622-10-5 193622-11-6 193622-12-7 193622-13-8 193622-14-9  
 193622-15-0 193622-16-1 193622-17-2 193622-18-3 193622-19-4  
 193622-20-7 193622-21-8 193622-22-9 193622-23-0 193622-25-2  
 193622-27-4 193622-29-6 193622-31-0 193622-32-1 193622-33-2  
 193622-34-3 193622-35-4 193622-36-5 193622-37-6 193622-38-7  
 193622-39-8 193622-40-1 193622-41-2 193622-42-3 193622-43-4

(material for org. **electroluminescent** device)

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

L33 ANSWER 21 OF 22 HCA COPYRIGHT 2010 ACS on STN

AN 127:72759 HCA Full-text

OREF 127:13779a,13782a

TI Organic **electroluminescence** material and **electroluminescent** device using that

IN Okutsu, Satoshi; Enokida, Toshio; Tamano, Michiko

PA Toyo Ink Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

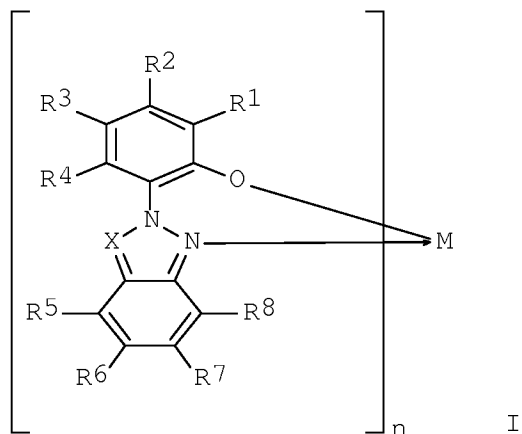
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 09111234	A	19970428	JP 1995-273807	19951023
	JP 3653825	B2	20050602		

PRAI JP 1995-273807  
OS MARPAT 127:72759  
GI

19951023



AB The invention related to an org. **electroluminescence** material represented by I [X = N, CH; R1-8 = independently, H, halo, alkyl, aryl, alkoxy, etc.; M = metal; n = 1-3 integer]. The material is suited for use in making high luminous and reliable **electroluminescent** devices.

IT 191218-21-0

(org. **electroluminescence** material fro  
**electroluminescent** device)

RN 191218-21-0 HCA

CN Benzenamine, N,N'-( [1,1'-bicyclohexyl]-1,1'-diyl-di-4,1-phenylene)bis[4-methyl-N-[4-[1'-[4-[(4-methylphenyl)[4-[1'-[4-[(4-methylphenyl)[4-[1-[4-[(4-methylphenyl)phenylmethyl]phenyl]cyclohexyl]phenyl]amino]phenyl][1,1'-bicyclohexyl]-1-yl]phenyl]amino]phenyl][1,1'-bicyclohexyl]-1-yl]phenyl]- (9CI) (CA INDEX NAME)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

IPCI C09K0011-06 [ICM,6]; H05B0033-14 [ICS,6]; H05B0033-24 [ICS,6]

IPCR H05B0033-14 [I,C\*]; H05B0033-14 [I,A]; C09K0011-06 [I,C\*]; C09K0011-06 [I,A]; H01L0051-50 [I,C\*]; H01L0051-50 [I,A]; H05B0033-12 [I,C\*]; H05B0033-12 [I,A]; H05B0033-24 [I,C\*]; H05B0033-24 [I,A]; H05B0033-26 [I,C\*]; H05B0033-26 [I,A]

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescence** **electroluminescent** device  
metal complex

IT **Electroluminescent** devices

**Luminescence, electroluminescence**

(org. **electroluminescence** material fro



electroluminescent device)

IT Coordination compounds  
(org. electroluminescence material fro  
electroluminescent device)

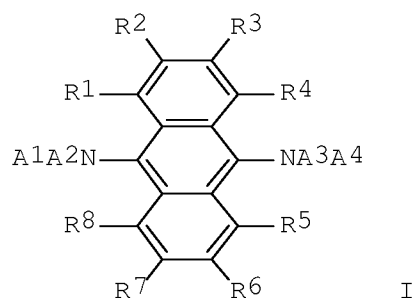
IT 18907-32-9 22945-72-8 28771-06-4 93470-37-2 93555-65-8  
174961-74-1 191217-82-0 191217-83-1 191217-84-2 191217-85-3  
191217-86-4 191217-87-5 191217-88-6 191217-89-7 191217-90-0  
191217-91-1 191217-92-2 191217-93-3 191217-94-4 191217-95-5  
191217-96-6 191217-98-8 191218-00-5 191218-02-7 191218-03-8  
191218-04-9 191218-05-0 191218-06-1 191218-07-2 191218-08-3  
191218-09-4 191218-10-7 191218-11-8 191218-12-9 191218-13-0  
191218-14-1 191218-15-2 191218-16-3 191218-17-4 191218-18-5  
191218-19-6 191218-20-9 191218-21-0 191218-23-2  
(org. electroluminescence material fro  
electroluminescent device)

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L33 ANSWER 22 OF 22 HCA COPYRIGHT 2010 ACS on STN  
AN 126:310317 HCA Full-text  
OREF 126:60025a,60028a  
TI Light-emitting material for organic  
electroluminescence device, and organic  
electroluminescence device for which the light-  
emitting material is adapted  
IN Enokida, Toshio; Tamano, Michiko; Okutsu, Satoshi  
PA Toyo Ink Manufacturing Co., Ltd., Japan  
SO Eur. Pat. Appl., 46 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 765106	A2	19970326	EP 1996-305586	19960730
	EP 765106	A3	19970813		
	EP 765106	B1	20021127		
	EP 1146034	A1	20011017	EP 2001-113795	19960730
	US 5759444	A	19980602	US 1996-688879	19960731
	KR 204220	B1	19990615	KR 1996-42007	19960924
	US 6251531	B1	20010626	US 1998-30791	19980226
PRAI	JP 1995-245607	A	19950925		
	JP 1996-12430	A	19960129		
	EP 1996-305586	A3	19960730		
	US 1996-688879	A3	19960731		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
OS MARPAT 126:310317  
GI

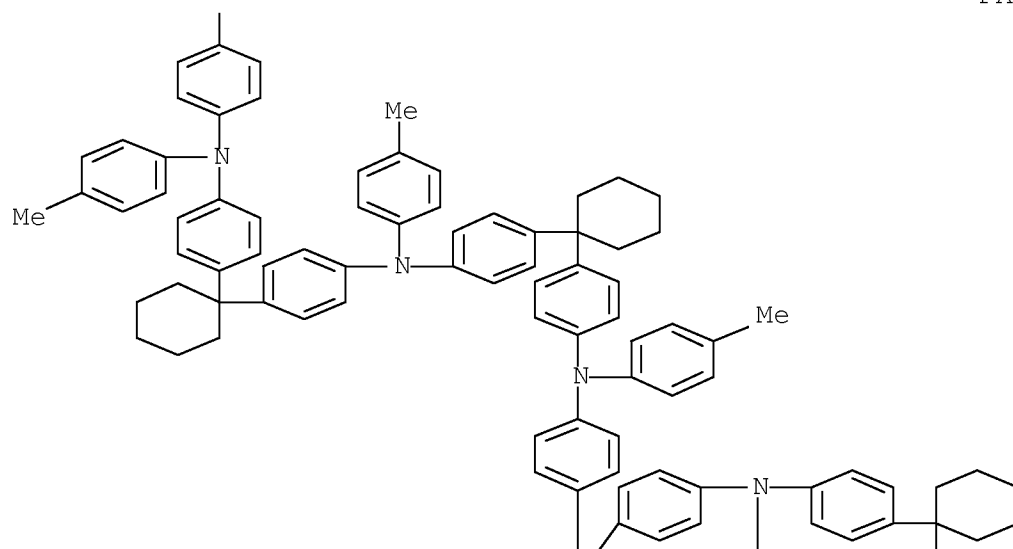
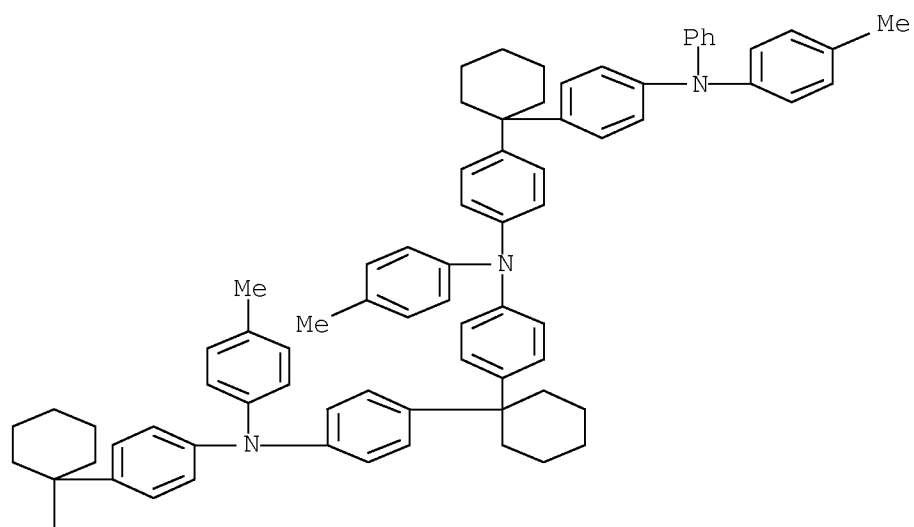


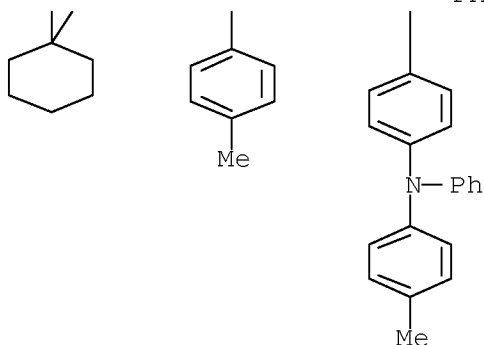
AB The title **light-emitting** compds. are described by the general formula I (A1-A4 are individually selected C6-16 substituted or unsubstituted aryl groups; and each of R1-8 is independently a hydrogen atom, a halogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted alkoxy group, a substituted or unsubstituted aryl group or a substituted or unsubstituted amino group, provided that adjacent substituents may form an aryl ring). Use of the compds. as **light-emitting** materials in org. **electroluminescent** devices, and org. **electroluminescent** devices contg. them, are also described.

IT 189263-95-4  
 (anthracenediamine deriv.-based **light-emitting** materials for org. **electroluminescent** devices and the devices)

RN 189263-95-4 HCA

CN Benzenamine, 4,4'-cyclohexylidenebis[N-(4-methylphenyl)-N-[4-[1-[4-(4-methylphenyl)[4-[1-[4-(4-methylphenyl)[4-[1-[4-(4-methylphenyl)phenylamino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]amino]phenyl]cyclohexyl]phenyl]- (9CI) (CA INDEX NAME)





CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 25

ST anthracenediamine deriv **electroluminescent** material; LED  
 anthracenediamine deriv **electroluminescent** material

IT **Electroluminescent** devices  
 (anthracenediamine deriv.-based **light-emitting** materials for org. **electroluminescent** devices and the devices)

IT Phosphors  
 (**electroluminescent**; anthracenediamine deriv.-based **light-emitting** materials for org. **electroluminescent** devices and the devices)

IT 574-93-6, Phthalocyanine 905-62-4,  
 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 2085-33-8 13978-85-3  
 14642-34-3 14855-54-0 15082-28-7 16842-52-7 58473-78-2  
 61843-06-9 65181-78-4 73276-70-7 89114-90-9 123847-85-8  
 146162-63-2 150405-69-9 151026-65-2 164259-44-3 166444-98-0  
 185690-39-5 188049-36-7 188049-37-8 188049-39-0 188049-40-3  
 188049-41-4 **189263-95-4**  
 (anthracenediamine deriv.-based **light-emitting** materials for org. **electroluminescent** devices and the devices)

IT 517-51-1 980-26-7 1047-16-1 1499-10-1 7520-01-6 38215-36-0  
 51325-91-8 99762-78-4 185505-35-5 186965-89-9  
 (anthracenediamine deriv.-based **light-emitting** materials for org. **electroluminescent** devices and the devices)

IT 177799-13-2 177799-16-5 189263-81-8 189263-82-9 189263-83-0  
 189263-84-1 189263-85-2 189263-86-3 189263-87-4 189263-88-5  
 189263-89-6 189263-90-9 189263-91-0 189263-92-1 189263-93-2  
 189263-94-3 189263-96-5 189263-97-6 189263-98-7 189263-99-8  
 189264-00-4 189264-01-5  
 (anthracenediamine deriv.-based **light-emitting** materials for org. **electroluminescent** devices and the devices)

IT 177799-11-0P 177799-12-1P 177799-14-3P 177799-15-4P  
(anthracenediamine deriv.-based light-emitting  
materials for org. electroluminescent devices and the  
devices)

IT 84-65-1, Anthraquinone 90-30-2, 1-Naphthyl-phenylamine 101-67-7  
122-39-4, Diphenylamine, reactions 523-27-3, 9,10-Dibromoanthracene  
10081-67-1 113705-11-6, 9,10-Diiodoanthracene  
(anthracenediamine deriv.-based light-emitting  
materials for org. electroluminescent devices and the  
devices)

OSC.G 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS RECORD (31  
CITINGS)